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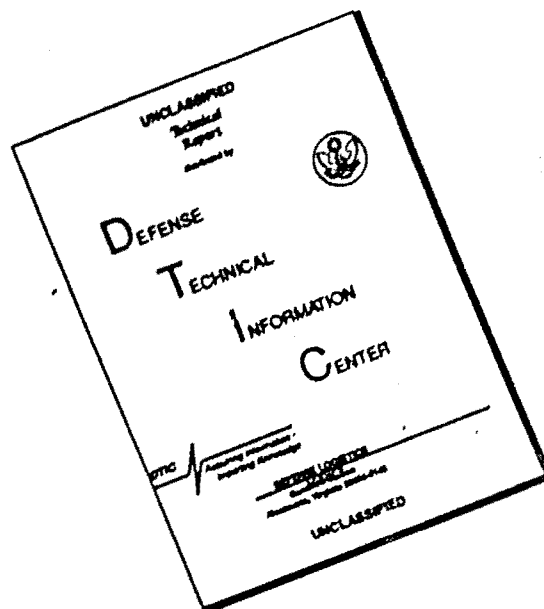


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COMPREHENSIVE REPORT ON  
PREDICTIVE SYNTACTIC ANALYSIS

Murray E. Sherry

September 1961

Electronics Research Directorate  
Air Force Cambridge Research Laboratories  
Office of Aerospace Research  
United States Air Force  
Bedford Massachusetts



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#### ABSTRACT

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research.

## I. COMPREHENSIVE REPORT ON PREDICTIVE SYNTACTIC ANALYSIS

Murray E. Sherry

### 1. Introduction

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. Past experience has been largely limited to the syntactic analysis of technical Russian texts,<sup>1,2,3,4</sup> although several attempts to analyze English texts by this method have been made.<sup>5,6</sup>

This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research. It is specifically not intended to be a concise summary of the predictive syntactic analysis scheme for the casual reader. Various brief outlines of the predictive method have been presented in earlier papers listed in the bibliography.

The experimental program is still far from complete. A number of grammatical structures, such as interrogative sentences and idiomatic constructions, have not yet been taken into account and, therefore, cannot be analyzed correctly at this time. No means of analysis for such structures will be suggested here unless their analysis seems to parallel closely that of an existing analysis technique.

Detailed operation of the experimental predictive syntactic analysis program is not mentioned here. These programming techniques and the problems

inherent in them are discussed at length by Isenberg<sup>7</sup> in another section of this report.

Experience has shown that, although the individual operations performed in the predictive analysis program are not formidable conceptually, en masse they are exceedingly difficult to master. The method adopted for the presentation of the operations is to start with the simplest ones and build on this base to the more involved mechanisms used in the program. This presentation is supplemented by a concise, complete, cross-referenced set of rules for the present analysis program (Appendix A). With these rules the reader can duplicate any analysis described or illustrated here.

Explicit examples from analyzed text have been included wherever possible to summarize the vast number of details that are covered. Hopefully, these examples are sufficiently varied to preclude the necessity for the reader to study the individual analyzed texts, since the scanning of texts is an extremely laborious method for studying program output. The majority of the words from the texts occur in a few simple grammatical constructions which are repeated endlessly.

Four texts, listed below, amounting to approximately 5500 running words, have been analyzed by the latest experimental version of the program and are the basis for the examples in this report:

Text 00A: Владимирский, К. В., "О синхронном фильтре," Журнал экспериментальной и теоретической физики, том 21, вып. 1, физический институт имени П. Н. Лебедева, АН СССР, 1951, 8 стр.

Text 00K: Гнеденко, Б. В., Курс теории вероятностей, глава 10, параграф 48, "Вводные замечания," Государственное издательство технико-теоретической литературы, Москва-Ленинград, 1950, 240-2.

Text OUU: Чебышев, П. Л., "Прочие сочинения биографические материалы,"  
Полное собрание сочинений П. Л. Чебышева, том 5, "Опыт  
элементарного анализа теории вероятностей," Издательство АН СССР,  
Москва, 1951, 27-8. (This text was suggested by I. Rhodes of  
the National Bureau of Standards.)

Text OOH: Печатные схемы сантиметрового диапазона, Сборник статей под  
редакцией В. И. Сушкевича, "Предисловие редактора русского  
перевода," Издательство иностранной литературы, Москва, 1956,  
5-7.

Texts OOK (924 words) and OOH (700 words) are taken from modern technical literature. Text OUU (545 words) is a small sample from a 19th century piece of technical writing. The analysis of this text is distinctly inferior to the analysis of any of the others due largely to the different syntactic rules followed almost 100 years ago. Text OOA (3270 words) has previously been used extensively to generate syntactic rules. This text has been re-analyzed with the latest version of the program although it has not been recently used as source material to improve the experimental program. Text COA has been rejected as source material to avoid biasing the program to the writing style of any particular author.

Two other texts were also analyzed by this latest experimental version of the program; these are texts \$ (816 words) and YYY (416 words). The sentences in text \$ were specifically composed to contain particular syntactic properties of interest that rarely occur in texts. The sentences in text YYY are interesting samples culled from several texts and brought together to provide material of greater than average grammatical variety to aid in testing and developing the predictive analysis program.

Several errors, either typing mistakes or program errors made during dictionary lookup, appear on the input tape of text \$. Rather than repeat the process of dictionary lookup, the input tape of text \$ was directly corrected. To distinguish the altered entries, the mark (CORR.ENTRY) has been entered, replacing the English correspondent in the 10-word item. The grammatical information placed in the corrected items is identical in every respect to the information which would have been automatically inserted by the appropriate programs.

Wherever possible, samples have been chosen from texts OOK and OOH. Texts OUU and YYY have been used as second choices. Examples not present in those four texts were chosen from text OOA, and text \$ was used only as a last resort. Extra words have often been left in the examples to indicate the context of the sentence structure being discussed.

More than one-third of the sentences in the six texts have been analyzed successfully by the experimental program. A "successful" analysis is one in which either the syntactic analysis produced by the program is grammatically correct or the error-detecting properties of the program are sufficient to indicate the correct solution. Due to the limited size of internal memory on the Univac II Computer, the computer used for the predictive syntactic analysis program, it has not been practical to provide for error-correcting routines. Thus there is no indication of error correction on the present output of the program.

Most unsuccessful sentence analyses are due to a single error. Several problems account for a large number of the errors: missing words in the Russian-English dictionary, no grammatical information for proper

names, no analysis for certain punctuation marks, etc. Other problems more closely associated with existing rules of analysis are mentioned in appropriate parts of this report.

As time passes, the remaining problems are more and more specialized. The rules for the solutions of these problems are utilized rarely and the size of the program increases rapidly. However, so long as the new rules fit into the basic scheme of the program, they can be easily incorporated.

The work on predictive syntactic analysis is an outgrowth of studies on a syntactic analysis technique by Rhodes<sup>8</sup> and the formalization of the syntax of the Łukasiewicz parenthesis-free notation by Burks, Warren, and Wright,<sup>9</sup> and bears general similarities to the linguistic model of Chomsky.<sup>10</sup> A theoretical model which is analogous to the predictive syntactic analysis program in several interesting aspects is due to Oettinger and the author.<sup>11 2,12</sup>

This report is divided into nine parts, each one dependent on the preceding ones. After a comprehensive outline of the predictive syntactic analysis technique (Part 2), the simple constructions of noun phrases are discussed (Part 3). Verb phrases and other relationships of government are then taken up in Part 4. More involved relationships among the components of clauses, the subjects and predicates, are discussed in Part 5, prior to the identification of clauses and complex phrase forms in Part 6. Parts 7 and 8 are devoted, respectively, to the identification of compound structures and other miscellaneous constructions. The various details are summarized by a series of examples of complete sentences analyzed by the program (Part 9).

Some of the comments and examples in this report were initially suggested by co-workers of the author. Mr. Warren Plath, in particular, has freely devoted many hours to the study of the analyzed texts. He has pointed out a significant proportion of the errors in the present program and has proposed means for correcting many of these errors.

## 2. The Predictive Syntactic Analysis Technique

The method of predictive syntactic analysis is based on the premise that a Russian sentence can be scanned from left to right, and that at any point in this process it is possible both to determine the syntactic structure of the word under consideration on the basis of the predictions made during the analysis of the words to its left, and to predict the syntactic structures which will be encountered to the right of the current word. Any language exhibiting the properties of a nested language can be analyzed in one direction in the same general manner.

In English, if a sentence is interrupted by a phrase or a clause, the embedded phrase or clause will be completed before the main clause is resumed. This embedded phrase or clause is considered to be nested within the main clause. Thus the clause "who came to dinner" is nested in the sentence: "the man who came to dinner ate heartily," whereas the unnested string of words, "the man who came ate heartily to dinner" is a questionable sentence at best. Another structure, the phrase "to dinner," is nested within the subordinate clause. A level, or depth, of nesting can be assigned to every phrase and clause in a sentence. Thus "the man ate heartily" is at the first level, "who came to dinner" at the second level, and "to dinner" is at the third and deepest level.



The concept of nesting recently has received the attention of several investigators. Alt<sup>13</sup> has discussed the problem of assigning numerical values to clauses and phrases within a sentence. Yngve<sup>14</sup> and Sager<sup>15</sup> have also used the nesting concept when discussing, respectively, the synthesis and analysis of English sentences. Sager uses the terminology of "depth of parenthesization" instead of "depth of nesting" since she conceives of an approach whereby a pair of parentheses is placed around every identifiable nested structure. Plath<sup>16</sup> has presented a method for diagramming nested structures and parenthesizing each of these structures.

The terminology for describing the predictive syntactic analysis technique has evolved parallel to the development of the technique itself. The original terminology has undergone a complete revision in addition to several minor modifications. The terminology to be described in this section is merely the latest and, hopefully, the most meaningful set of terms.

#### A. The Program Cycles for Predictive Syntactic Analysis

Predictions of syntactic structures are stored in a prediction pool which behaves somewhat like a pushdown store, a linear array of storage elements in which information is entered or removed from one end only, in accordance with a "last-in-first-out" principle.<sup>11</sup> New predictions are always entered at the top of the prediction pool, and the predictions are tested starting at the top of the pool and proceeding downward. The topmost prediction in a pool need not necessarily be the next prediction to be fulfilled.

In the experimental program the predictions used are those of the syntactic roles that the words assume in a sentence. Many predictions are named for classical syntactic roles such as the subject prediction. All

these names are explicitly defined within the context of the experimental program. These definitions need not coincide with the classical grammatical definitions, but they resemble the classical definitions closely.

The present program uses 10-word\* items both for input and for output (Figure 1)\*\* to take advantage of the input-output characteristics as well as certain internal operations of Univac I and II Computers. The first English correspondent stored in the dictionary entry of a Russian word, the morphological class of the Russian word, the Russian word itself, and the text serial number appear in the first five machine words of the 10-word item. The syntactic data is contained entirely in the last five machine words of the item. The coding format of the information in the last five machine words (word 5 to word 9) for each morphological type and syntactic class of Russian word is described by Foust<sup>17</sup> in another section of this report. Words 5 and 8 contain morphological and syntactic information that remains invariant during the analysis of the Russian word. During the analysis the syntactic role of the word in the sentence is placed into word 9, which, before the analysis, contains the dictionary entry number of the Russian word. Various grammatical characteristics, such as case, number, gender, etc., are, when applicable, stored in words 6 and 7. When the analysis program selects the information appropriate to the particular syntactic role of the Russian word, the remainder of the information is deleted from these two machine words.

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\* Machine words are numbered 0,1,...,9.

\*\* The figures for this section of the report are bound separately and included in a pocket attached to the back cover of the report.

The process of predictive syntactic analysis consists of two cycles, a testing cycle and a predicting cycle.

(1) The Testing Cycle. During the testing cycle the predictions are tested against the information about the arguments or grammatical characteristics of a word that are obtainable from a dictionary. Since the lexical properties of words do not always define a unique argument, a set of alternative arguments must be considered. Thus, "waters" has two alternative arguments: /noun, plural/ and /verb, 3rd person, singular, present tense/. The alternative arguments of a single 10-word item are completely described by machine words 5 to 8. If grammatical information must be stored with a prediction, it is placed in grammar words, which are referred to by the prediction.

From this point of view, the morphological homograph problem in Russian is subsumed under the heading of alternative arguments. It makes no difference with regard to the input whether a word has two or more alternative arguments such as the nominative singular and accusative singular for the Russian noun что, or whether there are two or more homographs of a word, such as the pronoun and the noun homographs of the word том, which are translated as "that" or "volume," respectively. Although the alternative arguments of что are described in a single 10-word item and the alternative arguments of том are described in two 10-word items, the program treats the alternative arguments of both words identically.

Whenever an alternative argument fulfills a prediction, an intersection occurs. The preferred argument is the alternative argument of the first intersection in a test sequence. The prediction of the first

intersection of a test sequence is fulfilled; likewise, a word is accepted by the fulfilled prediction. A fulfilled prediction is wiped or removed from the prediction pool.

The syntactic role is the grammatical role of the fulfilled prediction and is stored in word 9. The information contained in the preferred argument in words 5 to 8 and in the syntactic role in word 9 is, collectively, the grammatical unit.

In a test sequence all the alternative arguments of a word are tested against all the predictions in the pool in their respective orders, so that each prediction, in turn, is tested against the set of all alternative arguments. All intersections occurring subsequent to the first intersection are listed in hindsight for future reference, while the grammatical unit is recorded as the temporary analysis for the given word. The other alternative arguments which intersect with subsequent predictions are intersecting arguments, and the alternative roles are listed with them.

An output 10-word item and a hindsight 10-word item are almost identical in appearance; the sole difference is in the presence of two 2-digit columns located to the left of the text serial number in the output item. The first number is the chain number, an error indicator that will be discussed later; the second number states the total number of predictions in the prediction pool before the analysis of the 10-word item.

To indicate boundaries of different sets and subsets of predictions in the pool at a given time, several types of sentinels are placed in the pool. These sentinels are usually found just below the last prediction of a set. Presently, the format of sentinels coincides with the format of

predictions; however, this is a temporary expedient that will probably be abandoned in the near future.

(2) The Predicting Cycle. After the testing cycle has been completed and a grammatical unit for a Russian word has been chosen, the predicting cycle is started. The operations of this cycle update the prediction pool (1) by wiping the fulfilled prediction and other rejected predictions, (2) by modifying predictions already in the pool, and (3) by adding new predictions to the top of the pool as indicated by the grammatical unit of the analyzed word.

The rules for wiping predictions in the pool are based on the sentinels located in the prediction pool as well as on the predictions themselves. Modification of existing predictions and addition of new predictions are based on the word class of a word as well as its syntactic role. The grammatical categories such as person, case, number, etc., of a word play only indirect roles in the predicting process. This information serves to limit the words that can fulfill predictions, where the words fulfilling the predictions are restrained to agree with preceding analyzed words in one or more grammatical category.

In this manner, a noun assigned the syntactic role of subject would cause (1) the subject prediction to be wiped from the pool; (2) the predicate head prediction to be modified, so that only a predicate agreeing with the subject in person, number, and gender can be accepted; and (3) three new predictions, a compound subject, a noun complement, and a modifier, to be entered at the top of the pool. The compound subject is predicted because the syntactic role of the word is analyzed as the subject; the noun

complement, a prediction of a genitive noun phrase, and the modifier, a prediction of a participial phrase, are predicted by every noun regardless of its syntactic role.

Due to the secondary role played by the grammatical categories, an intersection can allow a multiple choice of categories. If a subject prediction is fulfilled by a nominative pronoun that can be either singular or plural, it is not necessary to preselect either alternative. Instead, the ambiguity can be carried along. In the particular example no restriction on number need be made in the predicate head prediction. Likewise, if a noun immediately following a preposition can exist in more than one of the cases that the preposition can govern, there is no need to assume arbitrarily that any one case is the correct one.

A reference to the grammatical unit that initiated a fulfilled prediction is also included in word 9 of the accepted Russian word. The three-digit number located to the left of the syntactic role is identical to the last three digits of the text serial number of the Russian word which initiated the prediction. In this manner, when a sentence is analyzed, not only is a syntactic role assigned to every word, but a linkage to the word initiating the prediction is established. To continue with the same example, if the word following the noun subject is a genitive noun, the text number of the noun subject is attached to the syntactic role of the genitive noun, and the noun complement can then be identified as dependent on the subject.

## B. Prediction Span Indicators

Not all predictions in the pool are of equal importance. Whereas, on the one hand, it would be difficult to justify the analysis of a sentence without an indication of a predicate, on the other hand, a sentence with no subordinate clause would be perfectly acceptable. To provide a relative level of importance among the predictions, a prediction span indicator (PSI) is assigned to every prediction in the pool. The PSI indicates (1) how long the prediction can remain in the pool before it must be wiped, (2) whether or not the prediction must be fulfilled for the analysis to be considered successful, (3) if the prediction is mutually exclusive with adjoining predictions (i.e., only one prediction from a set of mutually exclusive predictions can be fulfilled), and (4) whether or not the prediction should be tested at a given time.

The PSI can take on any value between 00 and 99. Any PSI with the value equal to or greater than 50 is considered inactive and cannot be tested. It is otherwise identical to its active counterpart with a PSI less than 50. Each prediction in a set of mutually exclusive predictions is indicated with a PSI of between 20 and 29 (or, inactively, between 70 and 79). The basic predictions presently used are:

- 00 - the prediction must be fulfilled by the next word in sequence or not at all;
- 01 - the prediction must be fulfilled during the analysis of the sentence;
- 02 - the prediction can be fulfilled more than once and is not to be wiped when fulfilled;
- 03 - the prediction may be fulfilled at any time but need not necessarily be fulfilled.

Only sentinels are listed with 02 PSI; all ordinary predictions belong to the other three basic types.

### C. Infinity and Arbitrary Choice

In any scheme of automatic syntactic analysis a method must exist to handle words which are not predicted. This class of words can be subdivided into two categories: those that should be predicted and those that cannot be predicted.

A number of words and other forms exist that either can never be predicted or can be predicted only occasionally. Examples of such words and forms are adverbs, prepositions, and commas. Adverbs occur both to the left and to the right of the words that they modify. In a left-to-right pass, adverbs are predicted only if they occur to the right of the words they modify. An adverb preceding an adjective or a verb usually gives no clue about the following structure. Thus, there is no information to be gained by having the adverb fulfill a prediction in the pool. Likewise, it is a difficult matter at best to link a prepositional phrase to the word it modifies even if the phrase follows immediately after the word. A comma is even worse in this respect since its position in a sentence is unpredictable. However, it is true that if two commas are used to isolate some structure in a sentence, the second of the commas may often be predicted by the first.

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When a word that cannot be predicted is encountered during a testing cycle, it must nevertheless be accepted in some sense, subject to later revision. Since there is no prediction in the pool, no finite number can be assigned the unpredicted word to indicate the linkage. Rather, an "infinite number" is assigned to the unpredicted word, and in the terminology of predictive syntactic analysis, the word is "accepted by infinity." (The ordinary prediction is considered a finite prediction.)

The necessity for adopting the concept of a word accepted by infinity is an admission that predictive analysis cannot be completed on a single pass. The hoped-for result from a single pass is not necessarily a complete and comprehensive analysis, but rather a limited and accurate analysis without error, upon which the desired comprehensive analysis can be built.

Situations arise when several intersections with the alternative arguments of a word both of an infinite prediction and of a finite prediction take place in the analysis of a single word. Since the infinite prediction is a weak prediction, really a statement that the analysis scheme is incomplete but that the analysis should not indicate an error, it is desirable that the stronger finite prediction be chosen whenever possible. This is accomplished by means of an override routine, whereby the grammatical unit of the finite intersection is substituted for the grammatical unit of the infinite intersection in the event the infinite intersection occurred first. In the present program an override takes place only rarely. It occurs usually when a short-form adjective is homographic with an adverb (see Part 5A).

The infinity classification is distinct from the arbitrary choice classification, the only other nongrammatically oriented classification in

predictive analysis. A word is an arbitrary choice when it cannot fulfill any prediction in the pool and does not belong to a class that can occur more or less randomly. By definition, the arbitrary choice classification excludes all words that can be accepted by infinity. A word such as a noun that does not fulfill any prediction during a testing cycle and cannot be predicted by infinity is automatically assigned to arbitrary choice.

One of the requirements for the identification and analysis of a complete sentence is that every word in the sentence fulfill a prediction. Thus a completely analyzed sentence can contain words accepted by infinity, but it cannot contain any words which have been labeled "arbitrary choice." The chain number, briefly mentioned previously, serves to indicate the occurrence of an arbitrary choice. The chain number is set to zero prior to the analysis of a new sentence. Every time an arbitrary choice is found, the chain number is incremented.

#### D. The Program Format

Predictive syntactic analysis has been conceived as a program consisting of an executive routine that performs the various bookkeeping duties and controls two sets of subroutines. The first set, the testers, correspond to the set of predictions. The second set, the predictors, correspond to the set of preferred arguments and syntactic roles that make new predictions or modify predictions already in the pool.

Although the sentinels are considered as part of the set of predictions, and consequently as part of the set of testers in the program, it is more logical to consider them as a third distinct set of subroutines.

The detailed logical description of the three sets of subroutines is given in Appendix A. The remainder of this report is devoted to a discussion of the operation and interaction of the various members of these sets. In addition to reporting on the present system, several logical errors in the system are pointed out and occasional suggestions to improve the performance of the program are included. The stress is on the improvement of the identification of the structures already being identified as opposed to the recognition of other new structures.

### 3. Elementary Phrase Structures

In predictive syntactic analysis the identification of the syntactic role of individual words and the identification of the phrase and clause structure within a sentence are carried out simultaneously. To explain the detailed operation of the process, it is convenient to start with the deepest nested phrase structures, which are the simplest, and to consider the other more complex structures later.

Consider now the three most elementary phrases, the noun phrase, the prepositional phrase, and the numeral phrase. Only the predictions essential to the analysis of these phrases will be mentioned here in an effort to avoid unnecessary complication. For a complete picture of the operation of the predictive analysis program, the steps should be worked out in detail using the rules of Appendix A.

#### A. The Basic Phrase and the End-wipe Sentinel

The most elementary phrase structure in Russian, referred to as the basic phrase, is the noun immediately preceded by none, one, or more than

one adjective, with all the words in agreement in case, number, and gender. Since predictive syntactic analysis proceeds from left to right, the syntactic role of the basic phrase is assigned to the leftmost word of the basic phrase. If the leftmost word is a noun, then the basic phrase consists of only one word; however, if it is an adjective, then the rest of the basic phrase must be identified before the program can return to the analysis of any other higher-level structure in the sentence.

The basic phrase can be assigned any of a number of syntactic roles, such as subject, object, or preposition complement, which are represented by appropriate predictions in the pool. When such a prediction is placed in the pool no indication is given of what the structure of the basic phrase will be. Therefore, both an adjective and a noun must be capable of fulfilling the prediction. For the same reason a participle, a numeral, and a pronoun must also fulfill the prediction. (Discussion of these syntactic word classes will be postponed for several pages.)

If the first word of a basic phrase is an adjective, a master prediction with a 01 PSI is made. Thus the analysis of the sentence can be successful only if another adjective or a noun agreeing in case, number, and gender with the original adjective follows. If the word that follows is a second adjective, a second master prediction is made, and this process continues until a noun fulfills the master prediction.

To ensure that either an error is indicated or the master prediction is fulfilled before other less deeply nested structures are analyzed, an end-wipe sentinel is placed in the prediction pool immediately below the master prediction. If the end-wipe sentinel is reached during the testing

cycle before any intersection between the alternative arguments of the current word being tested and the predictions located above the end wipe has been recorded, the end wipe causes itself and all the predictions above it to be wiped from the pool.

Before wiping predictions from the pool, the end-wipe sentinel subroutine must check to determine whether any of the alternative arguments of the current word can be accepted by infinity. If so, the wiping process does not take place.

This wiping operation seems quite arbitrary; however, sound theoretical principles have suggested this approach. A model of the Russian language for predictive syntactic analysis has been discussed previously.<sup>11,12,2</sup> The model is based on the parenthetical and parenthesis-free notation of mathematical expressions. It has been shown that if an expression is well formed, a syntactic analysis of the expression will leave no trace in the prediction pool. That is, if the prediction pool consists of a certain set of predictions before the start of the analysis of the well-formed expression, then the prediction pool will consist of the same set of predictions after the analysis of the expression. On the assumption that the Russian language is well formed in the same sense, the same rule can be applied to the syntactic analysis of the natural language. Of course, in a Russian analysis, no explicit indication of the end of a well-formed expression exists, so that it is necessary to take the opposite stand: if the first intersection in the test of a word occurs with a prediction located below a set of predictions in the pool belonging to a deeper nested structure, the deeper nested structure is assumed to be complete. On the hypothesis

that the expression is well formed, no trace of the analysis of the expression should remain in the pool and the residue of predictions generated by the analysis of the expression should be wiped from the prediction pool. A check on the inaccuracy of the hypothesis is the 01 PSI prediction. If one or more are wiped from the pool in such an operation, it signifies that the analysis did not result in a well-formed expression and an error exists.

The phrase *подобные антенные системы* (Figure 2)\* is a typical subject basic phrase. The adjective *подобные* fulfills the subject prediction in the pool. It also fulfills the left object prediction which is farther down in the pool. The second intersection is duly recorded on hindsight. As an adjective, *подобные* predicts a master that must be nominative, plural, and can have any gender. An end-wipe sentinel is placed under the master prediction. The following word, the adjective *антенные*, fulfills the master prediction and is accepted as the master of *подобные*. It too predicts a master that must be nominative, plural, and any gender. This second master prediction is fulfilled by the noun *системы*. The analysis program determines that the basic phrase has been completely analyzed when the following word, the verb *описываются*, is analyzed. The end-wipe sentinels, inserted into the prediction pool when the master predictions were made, are wiped without any indication of error.

The second basic phrase, the single word *этом* (Figure 3), illustrates the use of the end-wipe sentinel. When *этом* is analyzed, the topmost prediction in the pool is a preposition complement, a prediction for a basic

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\* Figure 2 and all those that follow contain text material both before and after analysis and are bound separately with this report for ease of reference. Information collected in hindsight during analysis is included in these figures.

phrase governed by a preposition. Этом has two alternative arguments, one adjectival and one nominal. The first intersection is with the adjectival alternative argument, so that этом is selected as an adjective and the other intersection is noted in hindsight. The master prediction generated by the grammatical unit of этом is for a locative, singular, and masculine or neuter basic phrase. Once more, an end-wipe sentinel is placed below the master prediction. The noun расположение cannot fulfill the master prediction; neither can it be accepted by infinity. The end-wipe sentinel therefore wipes both itself and the master prediction from the pool. Since the master prediction has a 01 PSI, the wipe is recorded in hindsight as an indication of an error. In this particular example the error is the obvious incorrect choice of intersections, and it can be corrected by selecting the nominal alternative argument of этом as the preposition complement.

The phrase при этом might be considered an idiom. To reduce the large number of idiomatic expressions that must be recognized in Russian, it is convenient to consider expressions idiomatic only if their syntactic or semantic meaning cannot be determined by an ordinary analysis. Since the grammatical usage of при этом can be obtained from ordinary syntactic analysis techniques, the prepositional phrase does not qualify, in this sense, as a syntactic idiom.

The third example, среднюю за много периодов амплитуду (Figure 4) illustrates the need for the infinity test before the end wipe performs its role. The words of the basic phrase среднюю амплитуду are not contiguous; the adjective is modified by the prepositional phrase за много периодов. The preposition is accepted by infinity and the rest of the prepositional phrase is analyzed before the basic phrase can be identified.

From the above examples the two functions of the end-wipe sentinel are evident. The sentinel provides a mechanism for wiping predictions that can no longer be fulfilled. It also provides a latent mechanism for the quick detection of errors by wiping predictions that must be fulfilled. The second function cannot be really utilized until errors are corrected during the analysis pass.

Occasionally an author writes a basic phrase with the noun preceding the adjective and with no intervening commas. This practice was quite common in the 19th century as evinced by text OUU where this structure was encountered in almost every sentence. In modern texts this structure is very rare; only one instance was discovered among the other analyzed texts: сопротивление это должно быть... (Figure 5). Perhaps the author was trying to emphasize his argument in this sentence. Due to the extreme rarity of such structures in the modern language, no provision for handling them has been made in the analysis program to date. The error in the analysis of это is propagated when должно is not selected as the predicate (see Part 5). A second independent error is caused by the selection of значительно as a verb complement rather than as an adverb (see Part 4E).

#### B. The Noun Phrase and the Pronoun Phrase

Whereas every adjective predicts a master that must be fulfilled, every noun predicts a noun complement that need not be fulfilled, but if it is to be fulfilled at all, it must be fulfilled at once. The noun complement prediction with a OO PSI can be fulfilled by a genitive noun phrase. Of course, the noun of a noun complement basic phrase also predicts a noun



complement, so that this type of structure may repeat several times. The initial basic phrase, which fulfills some prediction other than a noun complement, followed by any and all noun complement basic phrases together constitute a noun phrase. Any other deeper nested structures that interrupt the analysis of these basic phrases, such as the prepositional phrase in Figure 4, are part of the noun phrase.

A typical example of a noun phrase consisting of two basic phrases is печатные схемы сантиметрового диапазона (Figure 6). After печатные схемы is identified as the subject basic phrase, the noun схемы predicts the noun complement. The genitive singular alternative argument of the adjective сантиметрового fulfills the noun complement prediction and makes the subsequent prediction of a genitive singular master. The noun phrase is completely analyzed by the recognition of the noun диапазона as the master of сантиметрового. Although this noun also makes a noun complement prediction, the next item in the sentence is a comma that cannot fulfill the prediction.

Pronouns, with the exception of relative pronouns, are not treated as separate entities in the predictive analysis program. In the testing phase of the program, a pronoun can be accepted in place of an adjective or a noun. If the pronoun is coded adjectivally, the predictions of an adjective are made; if it is coded nominally, the predictions of a noun are made. A nominal pronoun cannot be modified by preceding adjectives and it cannot be followed by a noun complement. The treatment of a nominal pronoun as a noun is presently based on the hypothesis that no harm is done in making the same predictions since the nominal pronoun should not be found preceded by modifying adjectives or followed by a noun complement, and the wrong

prediction should not be fulfilled. Unfortunately, this hypothesis is not valid and separate categories are necessary. Она in the sentence она ничего не сказала (Figure 7) cannot have a noun complement under any circumstances. Ничего is really the object of the negated verb (see Part 4).

### C. Adjective-noun Homography

Adjective-noun homography in Russian is not uncommon and an appropriate method for handling the ambiguity is essential since every prediction that can be fulfilled by a noun can also be fulfilled by an adjective. The pronoun этом (Figure 3) exhibited this ambiguity. The homograph многие in the basic phrase многие физические явления (Figure 8) is more illuminating. As used in the example многие is an adjective. It is used as a noun in the counterpart example многие русских авторов.

The choice of homographs, which is determined by their ordering, can be based either on the statistical frequency of expectation or on fail-safe error indications in the subsequent analysis. The latter basis is obviously preferable for the ultimate achievement of an error-free analysis, and adjective-noun homographs are appropriately ordered with the adjective always preceding the noun.

An adjective predicts a master with a 01 PSI; that is, the master must occur. To ensure that the master occurs immediately after the adjective, with certain exceptions already mentioned, an end-wipe sentinel is placed underneath it in the pool. The example of Figure 3 has indicated that the lack of a master results in a quick error indication in the form of a wiped prediction recorded in hindsight. In contrast, the noun makes only the weak

prediction of a noun complement with a OO PSI. If no noun complement is found, the prediction is wiped and no record is kept that the prediction ever occurred. The net result is that if the nominal choice is in error, no explicit indication of the error is left.

Consider the basic phrase in Figure 8 as an example. By selecting the adjective before the noun, this phrase is analyzed correctly. But now assume that the phrase is the alternative многие русских авторов. The second word, русских, cannot fulfill the master prediction of многие since there is no agreement in case and number. The master prediction is therefore wiped by the following end-wipe sentinel. The error is detected and can be corrected since the only alternative action is to consider многие as a noun and predict a noun complement.

Now consider the counterexample where the noun is selected before the adjective. This time the alternative phrase is analyzed correctly, whereas многие физические явления is the problem. If многие is selected as a noun, a noun complement prediction is placed at the top of the pool. физические cannot fulfill the noun complement prediction, the prediction is wiped, and the analysis proceeds to test the other predictions in the pool with no indication of error. If there is another prediction located farther down in the pool that can be fulfilled by a nominative or accusative adjective, the program will assume that the syntax of the sentence is still being correctly analyzed. Only if there is no other intersection will физические be labeled arbitrary choice and will an error be indicated. Note that in selecting a noun first the error indication is not assured but is up to chance. This is a highly undesirable predicament!

## D. The Prepositional Phrase

The structure of a prepositional phrase is almost identical with that of a noun phrase, the only difference being that the leading basic phrase in a prepositional phrase is preceded by a preposition. In discussing the basic phrase or noun phrase, the analysis of the first word of the phrase was not considered but was postponed temporarily. Similarly, the discussion of the intersection of the preposition will be postponed and only the analysis of the phrase is considered.

Every preposition predicts that a preposition complement, a basic phrase in a case governed by the preposition, must follow immediately after the preposition. The Ol PSI of the preposition complement and the end-wipe sentinel placed immediately below the prediction present a situation identical to the master prediction already discussed.

Every preposition can govern one or more cases. This information is stored in word 6 of the dictionary entry of the preposition. In the first example, the preposition при of the phrase при различных исследованиях (Figure 9) can govern only the locative case. This is represented by the two P's in word 6, one each for the singular and the plural. In this example one of the three alternative arguments for the following adjective различных intersects with the preposition complement prediction. The identification of the following locative plural noun исследования completes the analysis of the phrase.

Multiple intersections resulting in case and number ambiguities are represented by the examples для ее описания (Figure 10) and в любой предыдущий момент (Figure 11). In the former example three of the alternative

arguments of ee intersect with the preposition complement prediction:  
/pronoun, adjectival, genitive, singular/, /pronoun, adjectival, genitive, plural/, and /pronoun, nominal, genitive, singular/. The first two can be selected simultaneously since the syntactic word class is the same, while the third can be entered only in hindsight. The subsequent master prediction can be fulfilled by a genitive singular or genitive plural noun. Here описание is genitive singular. In the latter example case intersections of the preposition complement are ambiguous, both the accusative singular and locative singular alternative arguments of любой intersecting with the prediction made by в. The second adjective предыдущий agrees with only one of the possible cases, resolving the ambiguity.

In both previous examples the ambiguity is finally resolved by a third word of the prepositional phrase. Such ambiguities are not always resolved. The analysis of the prepositional phrase в области (Figure 12) gives two syntactic possibilities, locative singular or accusative plural. No subsequent word in the phrase exists to resolve the ambiguity. Unless the reader semantically analyzes the context of в области, he cannot determine whether the author meant "in the region" or "in the regions." The resolution of such ambiguities in the predictive analysis program is dependent on the prediction of the preposition and its linkage to the word it modifies.

#### 2. The Numeral Phrase

All the cardinal numerals and other words expressing numeric concepts are treated in a special manner because they do not follow the same rules as ordinary adjectives and nouns. In speaking of a numeral phrase, only the set of words that are treated in the special manner is considered.

The ordinal numerals are not included in this set but are coded as ordinary adjectives. A complete list of the words that fall into the set of numerals has been given by Magassy.<sup>18</sup>

Numerals fulfill the same predictions as ordinary nouns and adjectives. In addition, if a numeral is nominally coded, normal nominal predictions can be made. However, if a numeral is adjectivally coded, which is the usual situation, a new type of master prediction, the numeral master, is made since the case and number of the numeral master do not always agree with the case and number of the numeral. Numeral masters are marked with an "N" instead of the normal "M" in word 9 to distinguish them from ordinary masters.

Three types of "agreement," depending on numeral type, occur between numerals and numeral masters: (1) the case and number of the numeral master agree with the case and number of the numeral; (2) the case and number of the numeral master do not agree with the case and number of the numeral; and (3) the case and number of the numeral master do not agree with the case and number of the numeral, and, in addition, the case and number of the adjectival numeral master do not agree with the case and number of a nominal numeral master. In the first two cases, if the numeral master is an adjective, the noun that completes the phrase agrees with the adjective as in an ordinary basic phrase.

Due to the above-mentioned special properties, numerals are coded in a somewhat different manner from adjectives or nouns.<sup>18</sup> The case and number combinations that the numeral can govern are entered in word 8. If a numeral is of the first two types then the information in word 8 is coded

in the normal "NGACIPNGACIP" notation; if a numeral is of the third type, a special "RZV" code is used.

The numeral одной in the phrase молекул одной жидкости (Figure 13) is an example of the first type. The hindsight for most numerals is unusually large since most numerals have adjectival and nominal homographs and therefore account for a large number of intersections. The alternative arguments of одной intersect eight times with predictions in the pool; the first intersection is between the /numeral, adjectival, genitive, singular/ alternative argument and the noun complement prediction made by молекул.

When a numeral is accepted as an adjective, the numeral predictor subroutine examines whether or not the numeral can have a normal agreement with the preferred argument of its numeral master. This test is accomplished in two stages. First the program checks for the "RZV" notation. If this is not found, the program looks for an intersection between the preferred argument of the numeral and the information stored in word 8. An intersection indicates that a normal numeral master should be predicted and the numeral is of the first type. No intersection would indicate the second type. In the illustrated example since the information in word 6 is identical to the information in word 8, the numeral has to be of the first type. The numeral is accepted as a genitive singular noun complement and жидкости is then accepted as the genitive singular master of the noun complement.

A second example of a numeral of the first type is illustrated by the numeral двух in the phrase в двух статьях сборника (Figure 14). Here are four multiple intersections between adjectival alternative arguments of двух and the preposition complement prediction of в. All four intersections are recorded and checked against the agreement code in word 8.

Only two intersections, accusative plural and locative plural, result from this test, so that the ensuing numeral master can be fulfilled only by an accusative or locative plural numeral master. The following noun *статей* turns out to be locative plural and the numeral master prediction is fulfilled.

When the numeral predictor subroutine examines an analyzed numeral and no intersection exists between the preferred argument of the analyzed numeral and the agreement code from the dictionary entry in word 8, a numeral master is predicted with whatever case and number combinations that are listed in the agreement code. The information in the preferred argument of the analyzed numeral is completely disregarded. If there is no intersection whatsoever with the preferred argument and the agreement code, then the numeral is of the second type. The numeral *пять* in the phrase *пять остроумных математиков* (Figure 15)\* illustrates this type. *Пять* is accepted as the subject, either singular or plural, of the sentence. The agreement code states that only a genitive plural master can follow the numeral. This genitive plural numeral master prediction is then fulfilled by the adjective *остроумных*.

The numeral phrase is still incomplete since a noun is needed to terminate the phrase. The adjective *остроумных* predicts a second numeral master agreeing in case and number. Although the gender is not tested, it should agree also. This test is analogous to the ordinary basic phrase containing more than one adjective, where each adjective predicts a new

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\* The verb *пришли* in Figure 15 and the verb *пришел* in Figure 20 are listed in the dictionary at this time only in the reflexive form.



master until finally a noun is analyzed. In this example the phrase is completely analyzed after the noun математиков is accepted as the second numeral master of the subject.

The numerals of the third type differ from the other types in that their numeral masters do not obey the simple rules of agreement. Whereas nominal numeral masters of the third type of numeral always appear in the genitive singular, adjectival numeral masters are either nominative plural or genitive plural. This unusual type of agreement is indicated by the coding "OR0000ZV0000" in word 8 of the dictionary item. The single numeral master prediction made by such numerals is organized to accept either a genitive singular noun or a nominative plural or genitive plural adjective. If a noun fulfills the prediction, then the numeral phrase is completely analyzed. However, if an adjective fulfills the prediction, the adjective generates a new numeral master prediction that will accept either the genitive singular noun or another adjective in the same case and number as the adjective making the prediction.

Three phrases illustrate the various combinations that are analyzed by the predictive analysis program. The noun жидкости is analyzed as the genitive singular numeral master following the numeral in the phrase две жидкости (Figure 16). The syntactic analyses of a genitive singular noun numeral master following a nominative plural adjective numeral master and a genitive plural adjective numeral master are illustrated by the phrases четыре черные книги (Figure 17) and четыре черных книги (Figure 18), respectively.

## F. Numeral Chaining

Another aspect of the numeral phrase poses special problems for automatic syntactic analysis. When a number greater than twenty is written out, all the numerals but the last in the sequence are written in the nominative case, regardless of the syntactic usage of the set of words. Only the last word of the sequence is inflected in the normal manner. In the phrase *при сто копек двух авторax*, *сто* and *копек* are written in the nominative case while *двух* is in the expected locative case.

The chain numeral prediction has been adopted to handle this problem. As the following examples indicate, the present rules for the chain numeral are not completely effective. Every numeral predicts a numeral master and a chain numeral mutually exclusively (with a PSI between 20 and 29). A chain numeral prediction can be fulfilled by any numeral that agrees with the chain numeral making the prediction in case, number, and gender. A chain numeral can also be accepted by infinity although, in this case, the numeral must have a nominative alternative argument. A chain numeral is assigned a 23 PSI and the numeral master is assigned a 21 PSI. Thus if neither of the mutually exclusive predictions is fulfilled, the single prediction with the 21 PSI is recorded on hindsight when the set of predictions is wiped. The recording of a single prediction is sufficient to indicate the error. If one of the predictions with a 23 PSI is fulfilled, then the prediction with a 21 PSI is wiped, unrecorded on hindsight.

A chain numeral can occur in one of two ways: the chain numeral is adjoined to a second cardinal numeral or the chain numeral is adjoined to an ordinal, a word that is considered an ordinary adjective rather than a numeral.

The analysis of a chain numeral adjoined to other cardinal numerals has been completed without error in all the instances in the analyzed texts. For example, *двести* in the phrase *двести тридцать два человека* (Figure 19)\* fulfills the subject prediction and then predicts mutually exclusively a nominative chain numeral and a genitive plural numeral master. *Тридцать* fulfills the chain numeral prediction and itself makes the same two predictions. *Два* fulfills the chain numeral prediction made by *тридцать* and, in turn, makes another chain numeral prediction and an "RZV" numeral master prediction. The latter prediction is fulfilled by the genitive singular noun *человека*. Such a numeral phrase is indistinguishable from an ordinary numeral phrase since the same "N" mark, which indicates numeral masters, erroneously indicates a chain numeral.

A correct analysis cannot be reached if a chain numeral phrase terminates in an ordinal numeral as in *сто сорок второй человек* (Figure 20). The ordinal would have to be accepted as a chain numeral for the analysis to succeed. However, ordinals are classified as ordinary adjectives and thus cannot fulfill the chain numeral prediction. This raises the question of whether ordinal numerals should not be considered as numerals that belong to regular inflected adjectival classes. The governmental properties of ordinal numerals are different from ordinary adjectives, as illustrated in Figure 20.

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\* A "bug" in the dictionary lookup program does not recognize any form of *человек* except the canonical form.

#### 4. Government and Objects

The two syntactic relationships "agreement" and "government" can be distinguished with reference to the question of matching. If the grammatical characteristics (case, number, and gender) of an adjective and noun match, the relationship is agreement. Otherwise, the relationship is considered government. Further, the two concepts can be distinguished since wherever agreement is mentioned, either case and number or case, number, and gender are tested; wherever government is mentioned, case alone is tested. This latter division seems more definitive and is used here. Thus the numeral master agrees with the numeral and the numeral does not govern the numeral master. The number of the numeral master is specified, even though it may be plural for an adjectival numeral master and singular for a nominal numeral master.

The phrase structures identified by agreement have been considered in Part 3 and the structures identified by government are discussed in this part. The prediction that is usually generated to fulfill a government relationship is the object, although several others exist. Among these, the preposition complement and the noun complement have already been mentioned (Part 3).

##### A. The Verb Phrase

The third simple deeply nested phrase structure recognized by the predictive syntactic analysis program is the verb phrase. It is somewhat more complex than the noun phrase or prepositional phrase since it may include one or both of the other two types. Both noun phrases and

prepositional phrases have a similar structure, adjectives and a noun following an initial adjective or preposition, respectively. A verb phrase consists of a verb that may be followed by a prepositional phrase, one or more objects (noun phrases), a verb master (an infinitive verb), or any combination of the three. The verb phrase may also consist of a verb followed by a clause as the object, but this structure is not identified in the present version of the program. In all three deeply nested phrase structures other words such as adverbs that modify individual words in the phrase are also found (see Figure 22).

The verb master is predicted by every verb just as a noun complement is predicted by every noun. The object and preposition object are predicted only if information is present in the dictionary item of the verb to indicate that they are expected to occur. Examples of each of the three types of verb phrases are given in the two phrases сводится к изготовлению (Figure 21) and требуют для своего изучения умения вычислять вероятности (Figure 22).

A preposition object prediction of the preposition к governing the dative case is made by the verb сводится. The "D9" mark in word 6 is the indicator of this prediction. A verb master and an instrumental agent prediction (Part 4C) are placed underneath the preposition object prediction in the pool. The instrumental agent is predicted because the verb is reflexive. The preposition к fulfills the preposition object prediction.

In the second example (Figure 22), the verb требуют predicts a preposition object (F4), a genitive object (P5), and a verb master. The preposition object predicted by требуют is or governing the genitive case. The preposition для which follows требуют cannot fulfill the preposition

object prediction and, instead, is accepted by infinity. The entire prepositional phrase для своего изучения умения is then analyzed. The infinitive verb вычислить then fulfills the verb master prediction of требуют and, in turn, predicts an accusative object (P7).

The present program does not make the object prediction of a verb mutually exclusive with the verb master prediction. Thus an object prediction remains in the pool if the verb master is fulfilled. In this example the noun вероятности fulfills both the accusative object prediction of вычислить and the genitive object prediction of требуют. The correct analysis is made because the accusative object was predicted after the genitive object and therefore is higher up in the prediction pool.

The prepositional phrase для своего изучения умения is an example of an unpredicted structure that modifies a word in a verb phrase and that is part of the verb phrase itself.

The preposition object prediction can serve another purpose in addition to linking the prepositional phrase to a verb or participle. Since the preposition object prediction states not only the preposition predicted but also the case governed by the preposition, the preposition complement prediction of the preposition is less ambiguous. In the example сталкивается с другими (Figure 23) the preposition complement predicted by с is limited by the "J1" code in the 10-word item of the preceding verb only to an instrumental basic phrase although usually the prediction can be fulfilled by an instrumental, genitive, or accusative basic phrase. So far, no example has been found where this process resolved an actual ambiguity.

The preposition object and object predictions are made based on grammatical information in Die Russischen Verben<sup>19</sup> which was coded in the

dictionary entries. Both a first government and a second government are listed in the source book although this distinction has been kept only with the object codes, a "P" code for the first government and an "L" code for the second government. At the time the coding was transcribed, no syntactic analysis program existed with which to verify the accuracy and the completeness of the coding. A comprehensive verification still has not been made, although it was considered by Plath some time ago.<sup>20</sup> The single overriding problem in the coding is with the government of an accusative object. Sometimes, when a verb is obviously transitive, the accusative government is not mentioned in the reference book used. Thus the absence of a government code in word 6 can indicate either that the verb cannot govern an object or that the verb is an ordinary transitive verb. For an automatic syntactic analysis technique, this distinction must be made explicitly.

The preposition object coding is not adequate at this time. The preposition object prediction was recently added to the analysis program on a limited scale. The prediction with a 00 PSI is made only by verbs. Thus, unless the preposition immediately follows the verb, the prediction is lost. In this limited manner only 12 of 614 prepositions in the analyzed texts were selected as preposition objects. A study of the texts has indicated that a total of 33 of the prepositions could be selected if the PSI were changed from 00 to 03 and participles also predicted preposition objects. This still seems to be too small a number and suggests that the coding information taken from Die Russischen Verben is insufficient for present purposes.

The two-character alphanumeric coding format for verbal government has been proven inefficient. It is neither suitable for automatic interpretation by a computer program nor sufficiently mnemonic to assist the coder or reader of program output material. The latter criticism is levied particularly at the preposition object codes.

Not all the government object predictions are made in the current predictive analysis program. Several analyses with missing object predictions as in *служащие опорой всем знаниям* (Figure 24), were found. In this example the "L8" in word 8 of the dictionary entry of *служащие* is not identified and an instrumental object prediction that would be fulfilled by *опорой* is not made.

The relative merits of testing an adjective before or after a noun when an adjective-noun homograph appears have been mentioned previously (Part 3C). The same problem appears in testing verb-noun and verb-adjective homographs against a given prediction. In the verb-noun case the verb alternative argument should be tested before the noun alternative argument since a verb makes predictions with 01 PSI whereas a noun does not. The verb-adjective homograph is typified by *встречаем* (Figure 25) where a rare and dubious short-form adjective forms a homograph with a normal finite verb form. Here too the verb alternative argument should be tested first, but on the grounds that the other possibility is so rare if existent at all as to be negligible. This example actually provides a third homographic form since *встречаем* can also be used participially.



#### B. Other Object Predictors

A participle is a form derived from a verb and carries with it the government characteristics of the verb. The preposition object, verb master, and object predictions that are made by verbs can also be made by participles. The coding information that was entered into the dictionary items of the verbs was also entered into the participle items. At this time the coding is not completely utilized and a preposition object is not predicted by participles. Studies indicate that with the present coding only 12 of the 614 prepositions would fulfill this prediction even if expanded to a 03 PSI. The participle followed by an object and followed by a verb master are illustrated by определяющих искомое (Figure 26) and позволяющие выделить (Figure 27), respectively.

An unnecessary programming difficulty has been caused by the government coding. In a participial 10-word item this coding is not located in the same place as the equivalent coding in a verbal 10-word item. The reason is historical, since participles were assigned to the adjectival morphological class and so had different information allocated to the spaces assigned to verbal government coding. In the future this should be taken into account. The verb and adjective morphological formats should be correlated and uniform government coding should be given verbs and participles.

Just as verbs and participles commonly govern objects and verb masters, so certain normal adjectives and nouns govern objects and verb masters. (A new name for a verb infinitive governed by a noun, adjective, or adverb is needed.) The nouns that behave in this manner usually have

originated from verbal forms. Such a noun is попытка in the phrase попытка осуществить мысль (Figure 28). The "P9" code indicating verb master government is in word 8.

The phrase of Figure 2, подобные антенные системы, contained an adjective, подобные, that was marked to predict a dative object ("P2"). If the object had occurred, it would have had to precede the next word of the basic phrase interrupting the analysis of the basic phrase. Such a dative is illustrated in назвать выделенный нами класс (Figure 29). In this phrase the participle выделенный is used adjectivally as an object and predicts an agent (see Part 4C) prior to predicting a master. The pronoun нами fulfills the agent prediction before the noun класс fulfills the adjectival master prediction.

The objects of an adjective or of a participle used adjectivally must precede the master. Therefore, whenever an adjective or participle used adjectivally predicts objects, the predictions are placed at the top of the pool. An end-wipe sentinel follows. Only then are the master prediction and a second end-wipe sentinel placed in the pool. In this manner the object predictions are fulfilled before the master prediction in the event of several intersections, and if the object predictions are not fulfilled the end wipe ensures that no trace of the predictions remains in the pool. Once the master is fulfilled, the objects of the adjective cannot occur again.

The object-master ordering in the prediction pool is worthy of further consideration. Although, on the one hand, the object must be placed first since it must be fulfilled first, on the other hand, if the alternative

arguments of a word fulfill both an object and the master prediction, the correct intersection is almost always the master. Yet, by this order in the pool, the object is identified and the master placed in hindsight. Two such intersections occur with the alternative arguments of области and the dative object prediction, and the locative, singular, and feminine master prediction of заданной in the phrase в заданной области пространства (Figure 30)\*. For such an occurrence, an override procedure has been established whereby the master intersection is chosen. Although this results in a correct analysis as the example illustrates, it is an ad-hoc procedure in the predictive analysis program. No harm results if the object intersection is chosen because the master prediction has a 01 PSI, and a wiped 01 PSI prediction is a clear error indication. Any procedure that is essential to the syntactic analysis of Russian will be added to the program. However, in an effort to provide a simple and elegant analysis technique, nonessential procedures such as the master-object override should be omitted.

### C. Agents

The agent prediction, made concurrently with object predictions, may be fulfilled only by a basic phrase in the instrumental case. An agent noun phrase indicates the means or agent by which the action expressed by a verb, participle, or verbal noun is accomplished.

\* A "bug" in the experimental program appears in this and several other following illustrations. Some agent predictions are erroneously being predicted with 01 PSI. Thus, if the prediction is wiped, a record appears on hindsight. All agent predictions should be made with 03 PSI.

Coding to distinguish agent government from object government does not exist in the dictionary items, so it is necessary to interpret certain instrumental object codes as agent codes. A general set of rules has been adopted to detect potential agent predictions fairly accurately. Verbs that are reflexive and would normally (i.e., when nonreflexive) take an accusative object, participles which are passive or reflexive and would normally take an accusative object, and verbal nouns (which belong to morphological class N10) which are marked to take an instrumental object are all marked by a program\* just prior to the syntactic analysis program so that an agent can then be predicted. An "R4" is placed in the appropriate place in the 10-word item as an identifying mark.

Three examples serve to indicate the three situations when agents are expected to occur. Облегчается снижением (Figure 31) is an example of an agent of a verb. The following two phrases, заполненных диэлектриком (Figure 32) and заполнение волновода диэлектриком (Figure 33), are examples of an agent governed by a participle and governed by a verbal noun, respectively.

Although the analysis of agents usually works quite well, errors appear on rare occasions. One error is represented by становится практически однородной (Figure 34), where an agent is predicted because the present program does not distinguish the copulative verbs like становится which take an instrumental object but not an agent. The only exception is the copulative verb быть (see Part 4D), the forms of which are distinctly marked and are recognized by the program. Another error which appears in the phrase

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\* This program is described in detail by Isenberg.<sup>7</sup>

называемого командой (Figure 35) is due to a legitimate double intersection. The participle называемого takes both an instrumental object and an agent as indicated by the "P4" and "R4" in word 8. The object and the agent of such participles can often be distinguished because the agent would be expected to be animate. The present tests do not provide for such sophisticated details.

In passive constructions an agent represents the logical subject of the action, and in such cases would appear as the formal subject if the construction were transformed into an active one. However, it is also possible to have agents (of means) in active constructions such as in он режет хлеб ножом. The relation of verb to agent and verb to object are quite different with appropriate differences in translation.

#### D. The Verb Быть

The various forms of the verb быть have been assigned to a unique class to facilitate the identification of verb phrases containing a form of быть. Every form of быть predicts a verb master as does any other verb. In addition, быть can govern a verb complement, namely a short-form adjective, and either a nominative or instrumental object. The three predictions of a verb master, object, and verb complement are made mutually exclusively and the object prediction has a 21 PSI. Examples of each type of verb phrase containing a form of быть are provided by будет находиться (Figure 36), было положено (Figure 37), есть два доклада (Figure 38), and быть студентом (Figure 39). Находиться is the verb master, положено is the verb complement, два доклада is the nominative object basic phrase, and студентом is the instrumental object.

In Russian, as in English with the verb "to be," *быть* can be followed by a predicate adjective, that is, an ordinary long-form adjective not followed by a noun. This occurrence is not taken into account at this time and the master prediction made by such an adjective is marked in hindsight when it is wiped, as in the phrase *может быть очень плохим* (Figure 40). If an adjective fulfills an object prediction that was generated by a form of *быть*, the master prediction made by the adjective should be given a 03 PSI.

#### E. Adverbs and Negated Verbs

Adverbial forms are very difficult to predict since there are no grammatical characteristics such as person, number, and gender that can be used to help in the analysis. Also, an adverb usually precedes the word modified and, of course, presents a situation that is difficult to handle in the left-to-right predictive syntactic analysis program. Because of these problems adverbs are currently accepted by infinity whenever they occur.

Adverbial forms are often homographic with conjunctions, prepositions, and short-form adjectives. Since short-form adjectives can be accepted only by a finite prediction, they will always take precedence over the infinite adverb intersection by means of the override. Prepositions, however, are usually accepted by infinity and thus with adverb-preposition homographs there is a problem of choosing which intersection to make first since both intersections occur with the same prediction. The same argument is used here as with the adjective-noun homograph and the noun-verb homograph; the preposition intersection should always precede the adverb intersection. The preposition makes a preposition complement prediction with a 01 PSI, whereas the adverb makes no such strong prediction, and usually makes no

prediction at all. Conjunctions are also accepted by infinity, and since they activate several predictions with 01 PSI (see Part 6), they should be accepted before adverbs.

The difficulties involved in a preposition-adverb homograph are made clear in the phrase около двадцати научно-исследовательских организаций (Figure 41). In this phrase a seemingly correct syntactic analysis can be reached with either interpretation of около. The possible analysis of a preposition complement following около suggests that the preposition homograph should be selected. Of the instances of such homography observed in the analyzed texts, the correct choice has almost invariably been the preposition homograph.

With the adverb syntactic role relegated to the least desirable one, the analysis technique is subject to error whenever the adverbial homograph is indeed the correct one to be selected. The sentence формально, если задаваться...точно так же протекают ... (Figure 42) contains two such errors. The first word формально is assigned the role of predicate head rather than the role of an adverb. This error is difficult to detect because such a predicate head often does not have an explicit subject (see Part 5). A second similar error occurs with точно which is selected as a conjunction rather than an adverb. The verb протекают, which fulfills the predicate head prediction of the supposed subordinate clause introduced by точно, actually should fulfill the main clause predicate head prediction previously fulfilled by формально.

Predictions are currently made by adverbs fulfilling several familiar roles: a negative (не and ни, although the latter is not recognized as a

negative at this time), a comparative, and a subset of the latter, a comparative used as a predicate. The adverb as a comparative predicate is mentioned in Part 5 and as an ordinary comparative in Part 8.

If a verb normally governing an accusative object is negated by an immediately preceding negative adverb, the verb can govern either a genitive object or an accusative object, although not both together. Since the negative adverb occurs before the verb and the object occurs after the verb, it is necessary to transmit the information from negative adverb to verb to object.

A negative adverb is accepted by infinity as any other adverb. It makes a special negative prediction that can be fulfilled by a verb, participle, or negated adverb, which is just another adverb following *he*. If the negative prediction is fulfilled by a verb or participle, a distinctive mark, an "N" in character position 10 of word 8, is entered into the 10-word item of the verb or participle. The testing process then continues but the intersection with the negative prediction is not recorded. Thus the verb or participle can fulfill its normal prediction. When the object predictions of the accepted verb or participle are made, the "N" is tested for, and if present, the genitive object prediction is made.

The process is best described by considering an example such as the pair of sentences: математик не хотел видеть ответы (Figure 44) and математик не хотел видеть ответов (Figure 45)\*. Математик is identified as the subject of the sentence, after which *he* is accepted by infinity as a

\* In typing these two sentences in text \$, видеть was misspelled *видет*, resulting in an incorrect dictionary output.



negative adverb. A negative prediction is placed at the top of the new prediction pool. This prediction is fulfilled by the following word, the verb хотел. The negative subroutine places an "N" in word 8 of the 10-word item of хотел but does not register a success. Instead, the analysis proceeds as if there had been no intersection. Хотел finally fulfills the predicate head prediction and is marked as the predicate of the sentence. From the grammatical unit of хотел, a genitive object ("P5" in word 5), an end-wipe sentinel and a verb master marked with an "N" in the grammar word are predicted. The "N" is placed in the grammar word if an "N" exists in character position 10 of word 8.

The following word, видеть, is an infinitive verb that fulfills the verb master prediction after the object prediction has been wiped. Видеть normally predicts an accusative object ("P3"). A genitive or accusative object prediction is made instead when the "N" in the grammar word is tested. In the former example the accusative ответы and in the latter example the genitive ответов fulfill the genitive or accusative object prediction.

The accusative-genitive ambiguity is illustrated by the sentence она не хотела читать книги (Figure 45). The reader does not know whether "she did not want to read the book" or whether "she did not want to read books" unless the context of the sentence is known. The wiped genitive object prediction in this illustration is due to the "P5" coding in the 10-word item of хотела. The same error occurred in the example in Figure 22.

If a negative prediction is fulfilled by a second adverb following it, the prediction pool is updated in the normal manner and the indicator that a negative adverb had occurred is lost. This is desirable since in

the structure: не + adverb + verb + object, the object cannot occur in the genitive case unless the verb normally can govern a genitive object.

The genitive object prediction usually caused by the presence of a negative adverb preceding a verb together with the noun complement prediction often cause multiple intersections that are difficult to resolve. A classical example is indicated by the sentence читатель не найдет в сборнике систематического изложения теории и техники полосковых линий (Figure 46). After the predicate найдет is identified, an accusative or genitive object prediction is placed at the top of the pool. The locative prepositional phrase в сборнике is then analyzed. The noun сборнике leaves a noun complement prediction at the top of the new pool, above the genitive object prediction. Obviously, any genitive adjective or noun can fulfill both predictions and a semantic resolution of the problem is required. In the sentence in the example the situation is compounded since there are three places in the sentence where the ambiguity exists. Either систематического, теории, техники, or полосковых could be, syntactically, the object of найдет. Without a semantic analysis, all possible translations would have to be given. The resolution is obvious only to a trained human reader, the adjective систематического in this context acting as the object of не найдет.

The prediction pool is not normally updated after an adverb is identified. Since the predictions for the word following the adverb are the same as the predictions when the adverb was identified, the entire predicting cycle of the program is skipped. However, since a negative adverb makes predictions which have to be placed at the top of the pool, the predicting cycle is not skipped after a не and the pool is updated in the normal manner.

It was only lately noted that, with the exception of the added negative prediction, the other predictions still should not be altered. The particular problems ensuing from this difficulty are illustrated in the sections on participial phrases (Part 6) and on compound structures (Part 7). The same argument is valid for any other type of adverbial form from which predictions are made.

#### 5. The Components of a Clause: Subject and Predicate

Only several simple operations in the predictive syntactic analysis program have been used to analyze the structures described in the last two sections. In all cases predictions have been made and wiped but never modified after they had been entered in the pool. The modification of predictions is the main additional tool utilized to analyze the main components of a clause, the subject and the predicate.

Great freedom of word ordering exists in an inflected language such as Russian. For the analysis of any given clause, no a priori indication specifies whether the subject or predicate will come first. Further, the object, which is usually considered part of the predicate, may precede the predicate head, the first word of a verb phrase or short-form adjective phrase. To increase the effectiveness of the predictive analysis technique, it is highly desirable to recognize the subject, predicate, and object of a clause on a single pass regardless of the order in which they occur.

One or more of these three elements might not occur in a given clause or might be implicit due to the construction of the clause. Clauses with missing components will be considered after a discussion of the analysis of clauses containing all the components.

## A. Clauses with an Explicit Subject, Predicate Head, and Object

Of the six possible orderings of the subject, predicate head, and object, four have been found among the sentences of the six analyzed texts.

They are:

- (1) subject - predicate head - object;
- (2) predicate head - object - subject;
- (3) object - subject - predicate head;
- (4) object - predicate head - subject.

A close look at various examples has shown that the more alternative arguments in the subjects and objects of clauses, the more likely the clause components are ordered more "normally." In a short sentence with no subject-object ambiguity, all six orderings are possible: я вижу вас, я вас вижу, вижу я вас, вижу вас я, вас я вижу, and вас вижу я.

If the object of the clause occurs after the verb predicate head, the object can be identified by the ordinary object prediction generated by the coding in the 10-word item of the verb. However, if the object precedes the predicate head, a prediction must be inserted into the pool to identify the object. To distinguish the object prediction artificially inserted into the pool from the object prediction made by a verb, the former has been called a left object, referring to the position of the object to the left of the predicate head in a sentence. This prediction can be fulfilled by an instrumental or accusative basic phrase. For programming convenience, two left object predictions are put into the pool, one for each case. The order of the four predictions in the pool is:

- (1) subject;
- (2) left object (instrumental);
- (3) left object (accusative);
- (4) predicate head.

If the predicate head prediction is fulfilled before the left object predictions, the latter are wiped from the pool and are replaced by any object predictions made by the verb which has fulfilled the predicate head prediction. Only one "object" label is used by the program and the object of a clause is indistinguishable from any other type of object, such as, for example, the object of a verb infinitive subject. A set of names for distinguishing different types of object should be instituted.

Most clauses have the subject - predicate head - object order and are typified by the clause *мы находим весьма просто выражение* (Figure 47). In this example the nominal pronoun *мы* is selected as the subject since it is unambiguously nominative plural. With the identification of the subject, a number of constraints can be put on the predicate head which must agree with the subject in person, number, and gender. The grammar words of the predicate head prediction are modified so that only a first person, plural, and masculine or feminine predicate head can fulfill the prediction. The left object prediction cannot be altered since no new information regarding objects can be obtained from a subject.

The second word, the verb *находим*, is an indicative verb that fulfills the predicate head prediction with the limitations on person, number, and gender. The verb intersects with the predicate head prediction and is accepted as the predicate of the clause. The two left object predictions are now wiped from the pool and the verb makes an accusative object

prediction based on the "P3" in word 5 of the 10-word item. Весьма is an adverb and is accepted by infinity without modifying the prediction pool. Просто is a short-form adjective that can be used predicatively or adverbially. The predicate head prediction is no longer in the pool, and просто can be accepted only as a second adverb. The following noun, выражение, is then accepted as the object of the transitive verb находим.

The next clause, практическое осуществление полосковых узлов отличается большой простотой (Figure 48), illustrates a similar order with an instrumental rather than an accusative object. Note that the subject noun phrase consists of four words, практическое осуществление полосковых узлов, but only the first word, the adjective практическое which fulfills the subject prediction, is responsible for the modifications in the predicate head prediction. After практическое is analyzed the predicate head is modified so that only a third person, singular, and neuter predicate can fulfill the prediction.

The intersection between the alternative arguments of практическое and the subject prediction is not unique since the adjective can also introduce an accusative basic phrase which could be a left object. This second intersection is stored in hindsight. Such multiple intersections with the left object prediction tend to be very common and often clutter the hindsight. There is, however, really no alternative as occasional errors occur and this is the only means of recognizing them.

The two clauses just described indicate the necessity of initially predicting both an accusative and an instrumental left object. Before the verb is recognized, no guess can be made of which type might occur. There

are several verbs which govern genitive or dative objects in addition to or instead of accusative or instrumental objects. A procedure for the identification of dative objects exists (see Part 5C), so that only the genitive object preceding the verb will result in an error. The only example found of such an error in the analyzed texts is the sentence она ничего не сказала, which was illustrated in Figure 7.

A rare verb infinitive subject is illustrated in the next clause дать возможность ... есть большой шаг ... (Figure 49). The infinitive subject limits the predicate head prediction to a third person, singular, and neuter predicate. There are two errors in the analysis of the part of the clause between the subject and the predicate head. Анализом is recognized as the agent of заключения, whereas it is actually used as the agent of проверить, an active construction. The program also cannot recognize the postpositional adjectives строгим and простым. The lack of unique object symbols is apparent in this clause where both возможность and большой are called objects although the former is not the object of the clause.

A large number of clauses have the object - predicate head - subject order, as in предметом настоящего сообщения является анализ (Figure 50). The identification of the noun предметом as the left object provides for the modification of the predicate head prediction, so that only a predicate that can govern an instrumental object can be accepted. With two mutually exclusive left object predictions in the pool, the intersection with one wipes both from the pool. After the noun complement basic phrase is analyzed, the verb является is tested, providing an example of a copulative verb that is not recognized as such and in which an "R4" agent prediction is

automatically inserted. However, since in both cases an instrumental basic phrase fulfills the prediction and such an instrumental basic phrase has been identified, the verb is accepted as the predicate head. With является as the predicate head, only a singular subject can fulfill the subject prediction. The noun анализ fits the description and is accepted.

Two separate left object predictions, one for the instrumental and one for the accusative, are not necessary. Just as multiple intersections can occur with object and preposition complement predictions, a combined instrumental-accusative left object can be used also.

Another interesting order is shown in the clause дает ответ статистическая теория диффузии (Figure 51) where both the subject and the object follow the predicate. Since the predicate head prediction is fulfilled before either the subject or left object predictions, the left object predictions are wiped, the subject prediction is modified so that only a third person, singular subject can be accepted, and a new accusative object prediction is entered into the pool. The noun ответ that follows the verb дает intersects with both the accusative object prediction and the modified subject prediction. The first intersection is with the new object prediction, so that "object" is chosen as the syntactic role of ответ. The following basic phrase, статистическая теория, is unambiguously nominative and can fulfill only the subject prediction, and in the process justifies the selection of ответ as the object.

One other example completes the description of the four orderings found in the analyzed texts: суммарную ширину...мы будем называть шириной полосы (Figure 52). The analysis of this clause contains several errors. The particular combination of errors makes it seem that the analysis is



correct. In this clause the object precedes the subject which, in turn, precedes the predicate. Further complication arises because a second object follows the predicate.

The analysis starts correctly with the identification of the initial noun phrase *суммарную ширину отдельных полос* as the accusative left object of the clause. The subordinate clause *которая дается формулой (2)* can be neglected for the purposes of the present exposition (see Part 6). The predicate head prediction is modified so that only a transitive verb can fulfill the prediction. After the analysis of the left object, the subject is discovered next. *Мы* fulfills only the subject prediction and further modifies the predicate head prediction whereby only a first person, plural, and masculine or feminine predicate can fulfill it. The following word, the verb *будем*, erroneously contains a "P3" (accusative object) in word 5 and thus fulfills the modified predicate head prediction.

*Суммарную ширину* is actually the object of the verb master *называть*. If *будем* did not have the "F3" code, the analysis would fail since the program does not contain a mechanism to analyze a clause in which the left object is the object of a verb master rather than of the predicate head. (See the comments in Part 4 regarding Figure 22.) The verb *называть* is correctly coded with both a "F3" and a "F4" to indicate that it can govern both an accusative and an instrumental object in one clause.

Although in all the previous examples of predicate head identification indicative verbs fulfilled the predicate head prediction, other forms can also fulfill this prediction. In the clause *большая часть статей посвящена описанию* (Figure 53), a short-form adjective *посвящена* fulfills

the predicate head prediction. Such a short-form adjective can be the predicate head regardless of the person of the subject. In the current program, however, the short-form adjective will not be accepted as the predicate head unless a third person predicate can be accepted. (This restriction is not likely to result in any errors since in scientific texts the probability of finding a short-form adjective used predicatively with a first- or second-person subject is almost nonexistent.) The number and gender of the short-form adjective must agree with the subject. Object predictions are made, based on the same codes that are found in verbs. In adjectival 10-word items these codes are all found in word 8.

The short-form adjective-adverb homograph is not always used predicatively. Particularly, if a short-form adjective-adverb homograph precedes a verb, the short-form adjective is selected as the predicate and there is no prediction in the pool for the indicative verb to fulfill. This problem appears in the clause *собственно...приходится иметь* (Figure 54). *Собственно* belongs to a class of words that are either short-form neuter adjectives or adverbs as indicated by the -о ending. The predictive analysis program analyzes *собственно* as the short-form adjective predicate head. When *приходится* is analyzed, there is no prediction for it to fulfill and it is marked an arbitrary choice. This type of error is not difficult to detect since an indicative verb can fulfill only a predicate head prediction. If the prediction is not in the pool, the intersection of the word that previously fulfilled the prediction is the error.

All clauses are not analyzed so easily as those already discussed. For example, in *физика и техника интересовало изучение процесса* (Figure 55),

физика и техника are identified as the subjects of the clause and the second intersection with the left object prediction is noted in hindsight. The predicate head prediction is modified so that only a plural and feminine predicate can fulfill the prediction. Интересовало, however, is singular and neuter and cannot fulfill the predicate head or any other prediction in the pool. Obviously, физика и техника are the object of интересовало, and изучение is the singular neuter subject desired. This type of error would be quite easy to correct by an error-correcting program.

#### B. Clauses with Implicit or Missing Components

A more difficult problem than the recognition of errors in the analysis of words in a clause is the problem of knowing when a seemingly essential component is either implicit in the clause or need not be present at all.

The most common problem is the missing object or agent. As was mentioned earlier, the government coding of verbs or participles has been found lacking. One aspect not mentioned earlier is that there is no distinction between required and optional objects. With a distinctive code it would be possible to give 01 PSI to required objects and 03 PSI to optional ones. The verb проследить in the clause проследить за движением какой-либо молекулы (Figure 56) should make an object prediction with 03 PSI, so that when the end-wipe sentinel below the object prediction wipes the object prediction, no mention is made in the hindsight. As the program stands now, the wiped object prediction represents an error in analysis.

No attempt to look for errors indicated by wiped object predictions is contemplated or would be wise until a detailed study of the object coding in the dictionary entries is carried out.

An optional object prediction in the program would assist in resolving both intersections of the alternative arguments of a word with a subject and an object prediction. In the clause протекают и другие явления (Figure 57), другие is selected as the object of протекают instead of as the subject of the clause. Eventually the subject prediction is wiped and entered in the hindsight. Under present circumstances if другие were selected as the subject, the object prediction would be marked in hindsight and the solution of the problem would not be obvious to the program.

Under several circumstances the explicit subject of a clause can be missing. A subject is always implicit if an impersonal, such as можно in можно оценить увеличение (Figure 58), is used as the predicate head. When an impersonal fulfills the predicate head prediction, the subject prediction is wiped from the pool with no mention made in hindsight.

Two types of predicate heads - neuter, singular, short-form adjectives and first person, plural, indicative verbs - often appear without explicit subjects. When перечислим in the clause перечислим несколько задач (Figure 59) is analyzed, the subject PSI is changed from 01 to 03 so that the analysis will be judged successful if no subject is found. The same action should take place with the neuter short-form adjective predicate.

The short-form adjectives and the impersonals belong to very similar classes. In a number of cases a word appears in the dictionary as a short-form adjective-impersonal homograph. This situation is entirely unnecessary and the impersonal dictionary entry can be eliminated. As an example видно in the clause отсюда видно (Figure 60), has three homographs: a short-form adjective, a parenthetic word, and an impersonal. The impersonal performs

no useful function that is not attributed to the short-form adjective also, so that the third entry is redundant. Parenthetical words are presently treated as adverbs, although in this instance the adverbial function of *видно* is already stated in the short-form adjective dictionary entry.

One last predicate form that does not take an explicit subject is the verb infinitive used as a predicate after *если* and *чтобы*, such as *характеризовать* in the clause *чтобы характеризовать кратко принцип* (Figure 61). Both *если* and *чтобы* make special infinitive predicate head predictions with 00 PSI that can be fulfilled only by verb infinitives following the conjunctions and separated from the conjunctions only by constructions accepted by infinity. If the infinitive predicate head prediction is fulfilled, the ordinary subject and predicate head predictions for the clause are wiped from the pool.

#### C. Indirect Objects

A second special object prediction, the indirect object, is placed below the predicate head prediction when the subject, predicate head, and left object predictions are inserted in the pool. The indirect object prediction serves to identify both "datives of reference" and dative indirect objects. These two grammatical constructions are shown by the examples in Figures 62 and 64, respectively.

To analyze a dative of reference or a dative indirect object, the separate indirect object prediction is needed, since this prediction can be fulfilled in addition to the regular accusative or instrumental object predictions. The indirect object prediction was designed as a catchall for

all unpredicted dative basic phrases that might be considered indirect objects and was placed under the predicate head prediction so that it would not interfere with the other object predictions. Thus an intersection with the indirect object prediction cannot take place until every other possibility has been explored.

This approach is erroneous as several examples will show. The indirect object or dative of reference should be treated in the same manner as the accusative or instrumental object of the clause. A left indirect object that is a counterpart of the left object prediction should be introduced, located above the predicate head in the pool. If the left indirect object prediction is not fulfilled when the predicate is found, the prediction should be wiped from the pool with the same mechanism that wipes the left object prediction. After the predicate is identified, an indirect object prediction can be placed in the pool below any other predictions made by the predicate.

The examples that follow will show the result of the present indirect object prediction. The proposed scheme will be discussed relative to these examples.

The dative of reference which fulfills the present indirect object prediction would usually fulfill the left indirect object prediction under the proposed scheme. The clause *мне кажется* (Figure 62) is typical of this class. The dative of reference precedes the predicate head and no subject of the clause is ever found.

The identification of an indirect object is not foolproof due to potential multiple intersections. *Ей* in the clause *ей или ему будет*

холодно (Figure 63) can fulfill both the left object and the hypothetical left indirect object. The former intersection would be selected and the latter would be entered in hindsight since instrumental left objects are much more common than dative left indirect objects. Eventual recognition of the error would provide a mechanism for selecting the second intersection as the desired one.

If the dative indirect object follows the predicate head, it usually precedes the direct object. The indirect object should be predicted by the predicate head at the same time as the direct object. The coding in the dictionary for indirect objects is usually missing and an end-wipe sentinel intervenes between the objects predicted by the verb and the initial pool if the indirect object is identified. The analysis of the sentence она пишет ему письмо (Figure 64) is typical of this action. Under present rules the indirect object prediction is placed below the predicate head prediction, such that, after the analysis of она as the subject, the prediction pool would be ordered as follows:

- (1) left objects;
- (2) predicate head;
- (3) indirect object.

The identification of the verb пишет as the predicate head would wipe the left object predictions and introduce an accusative object prediction:

- (1) object (accusative);
- (2) end wipe;
- (3) indirect object.

EMY cannot fulfill the object prediction which is subsequently wiped by the sentinel. Even though EMY is then analyzed as the indirect object, there is no prediction left for ПИСЬМО to fulfill.

Under the proposed scheme the prediction pool after она is analyzed would be:

- (1) left object;
- (2) left indirect object;
- (3) predicate head.

After номер is analyzed as the predicate head, the pool would be:

- (1) object (accusative);
- (2) indirect object;
- (3) end wipe.

Both the direct and indirect object in the pool would then be analyzed by the program.

#### D. Gaps in the Analysis Program

Two common structures are not yet identified by the predictive syntactic analysis program: the use of the comparative adverb as the predicate and the use of a complete subordinate clause as the object. Both these structures could be easily introduced by means of modifications to the existing tester subroutines.

The former oversight is illustrated by the adverb сложнее in the clause симметричные полосковые линии несколько сложнее несимметричных (Figure 65). Сложнее should be accepted by the predicate head prediction just as a short-form adjective can be accepted. The adverbial alternative intersection would be recorded in hindsight in the event of error.



The clause что длительность подключения кулонметров была выбрана (Figure 66) can be identified as the object of the verb master отметить. Alt<sup>13</sup> has pointed out that что, чтоб, чтобы, and как are conjunctions that can introduce object clauses. These conjunctions should be linked with the appropriate accusative object or left object predictions in the prediction pool when they are tested.

#### 6. The Identification of Clauses and Higher Phrase Structures

To identify the individual more complex components of a sentence, the predictions of the grammatical constructions in the different components must be distinctly marked or otherwise isolated in the pool. The various groups of predictions are separated by the end-wipe and other sentinels that are described in this section.

After the mechanism necessary to identify simple sentences has been indicated, the comma end-wipe sentinel will be considered. Then recognition of subordinate clauses and finally of higher phrase structures follows.

##### A. Simple Sentences

It is fairly easy to analyze simple sentences in predictive syntactic analysis. The existence of all the main components of a simple sentence can be hypothesized before the analysis even starts. A set of initial predictions for a subject, left object, predicate head, and indirect object would merely have to be supplemented with an end-of-sentence prediction. The entire prediction pool would be ordered as follows (using the present indirect object prediction):

- (1) subject;
- (2) left object;
- (3) predicate head;
- (4) indirect object;
- (5) end of sentence.

The end-of-sentence prediction actually serves both as a prediction and as a sentinel. First, as a prediction, it can be fulfilled by a period, semicolon, or any other punctuation mark that signifies the end of a sentence. A semicolon fulfills the prediction since in Russian it usually links syntactically independent complete sentences which the author wishes to keep together. Secondly, as a sentinel, the end-of-sentence prediction wipes the prediction pool after all the tests for intersections have been completed. This function has been named the end-of-sentence end wipe. If there has been an intersection with the end-of-sentence prediction, the sentence is complete and a check must be made to determine whether any predictions which have 01 PSI still remain in the prediction pool. If any are found, they indicate errors which should be corrected. The present mechanism wipes all the predictions in the pool and all those with 01 PSI are copied into hindsight.

If there has not been an intersection with the end-of-sentence prediction, then the sentence is still incomplete. At this point the program determines whether the alternative arguments of the word being tested have intersected with any of the predictions in the pool. If they have, the program proceeds to the predicting cycle: if not, then the word is an arbitrary choice. The prediction pool is completely wiped, all predictions with 01 PSI are entered in hindsight, and the chain number is incremented to point out this type of error. When these operations are completed,

control is passed to the arbitrary choice tester subroutine thus setting up appropriate conditions for the predicting cycle.

In a program which could automatically correct errors, it would not be necessary to perform some of these operations. Arbitrary choice would give sufficient indication that the forward analysis should stop and that the steps should be retraced until the error was found.

#### B. The Comma End-wipe Sentinel

Only a small number of the sentences found in scientific texts are simple sentences. The vast majority of the sentences are complex; that is, they have one or more subordinate clauses. For each clause in a sentence, a new set of subject - left object - predicate head - indirect object predictions has to be introduced into the pool. The more clauses in a sentence, the more sets of predictions that must be handled at one time. These sets of predictions must be kept distinct for a stable analysis to evolve.

While the subordinate clause in the sentence *стул, на котором он сидел, был сломан* is being analyzed, the adopted nesting hypothesis allows none of the predictions of the main clause, remaining in the pool after *стул* has been analyzed, to be fulfilled. Until there is an indication that the subordinate clause has been completely analyzed, there is no point in testing for the predicate of the main clause. The end-wipe sentinel does not help solve this problem since the scanning of the prediction pool is not affected by the presence of the sentinel. The end wipe does not distinguish between the predictions of the dependent clause and the predictions of the independent clause. That is, whereas the end-wipe sentinel eliminates predictions once they can no longer be fulfilled, the sentinel is of no help

in inhibiting the testing of other predictions, such as the predicate head of the main clause, which cannot be fulfilled until the subordinate clause has been completely analyzed.

Likewise, in the sentence *когда она ушла, он сел на стул*, after *когда* has been identified as a conjunction introducing a subordinate clause, the prediction pool contains two identical sets of subject - left object - predicate head - indirect object predictions. *Она* and *ушла* can fulfill both subject predictions and both predicate head predictions, respectively. The intersection with the main clause prediction is wrong in both cases since the subordinate clause must be completed before the analysis returns to the main clause.

To isolate sets of predictions in the pool and to inhibit the testing of some of these tests, a comma end-wipe sentinel has been adopted. This sentinel is inserted beneath all the other predictions for a clause. The name of the sentinel implies its origin. It has been hypothesized that subordinate clauses, as well as certain types of phrases, are isolated by commas from the rest of the sentence in which they occur; and the predictions for a new clause or phrase can be made after a comma has been analyzed. Actually even simple prepositional phrases are occasionally separated from the rest of the sentence by commas, as in the sentence *здесь искомое, кроме самых простых случаев, определяется...* (Figure 67).

In Russian writing, the rule that commas separate clauses is followed fairly strictly. Sentences do occur, however, in which the commas separating clauses are absent. Only one such sentence, *почти вся настоящая глава будет...и только в последнем параграфе мы ладим...* (Figure 68), has been

discovered in the analyzed texts. Whether or not such sentences are "good Russian" is an academic question since their solution will be necessary for an effective syntactic analysis scheme. When such sentences are handled by the predictive analysis program, the comma end wipe must be introduced when the new phrase or clause is detected. At that time perhaps a change of name of the sentinel might be in order!

Occasionally, during a sentence analysis, it is known that a deepest nested phrase or clause is only partially identified and that the next word must belong to the same structure. At other times there are clues that perhaps the deepest nested phrase or clause has been completely analyzed and that either a new phrase or clause might start or the analysis might return to a less deeply nested grammatical structure that was only partially analyzed before the deepest nested phrase or clause started. Therefore, the comma end-wipe sentinel must operate in two modes, which have been named the continue clause mode and the end clause mode. In the continue clause mode the comma end wipe inhibits the testing of the predictions located below it in the pool. In this mode the prediction pool is scanned as if there were no predictions located below the sentinel. (However, the predictions below the comma end wipe are retained when the pool is updated.) In the end clause mode the sentinel behaves as an ordinary end-wipe sentinel and the predictions below the comma end wipe are scanned in the normal manner.

When она from the sentence когда она ушла, он сел на стул is being analyzed, the comma end wipe should be in the continue clause mode since there is no question that the subordinate clause is currently being identified. In contrast, when the pronoun он located after the comma is being

analyzed, the sentinel should be in the end clause mode. At this time the analysis might return to the main clause (as it does in the example), might continue with another deeper nested structure, or might even remain in the same clause. The latter two possibilities are illustrated, respectively, by the sentences *когда она ушла, одетая в новой шубе, он сел на стул* and *когда она стояла, ходила или бегала, ее нога болела.*

Since the basic hypothesis for this sentinel is the assumption that, in Russian, commas separate certain phrases and clauses from the rest of a sentence, to help the analysis of these phrases and clauses, it is natural for the comma end wipe to be in the continue clause mode at all times except immediately following the recognition of a comma. The word after the comma should be tested with the sentinel in the end clause mode. The analysis of the word following a comma can then return to any previous depth of nesting. After that word is tested, all remaining comma end-wipe sentinels in the pool are returned to the continue clause mode. However, if the word after the comma can be accepted by infinity, then the depth of nesting cannot be determined until after the infinite construction such as a prepositional phrase has been completely analyzed.

To switch from the continue clause mode to the end clause mode and to provide for the analysis of an infinite construction following the comma, the comma predicts another sentinel, the comma end-wipe activator, which is placed at the top of the new prediction pool. Thus, when the alternative arguments of the word following the comma are tested against the predictions, this sentinel is the first one encountered. The comma end-wipe activator subroutine temporarily suspends the testing cycle and scans the pool for

comma end-wipe sentinels. Every one found is switched from the continue clause mode to the end clause mode. The comma end-wipe activator subroutine then tests whether or not an alternative argument of the word under test can be fulfilled by an infinite prediction. The subroutine checks for inter-sections and if there are none, the comma end-wipe activator is wiped from the pool. Control is then returned to the normal operations of the testing cycle. The change back to the continue clause mode is carried out within the executive routine of the predictive analysis program when the pool is updated.

If the word following the comma can be fulfilled by infinity, the comma end-wipe activator is not wiped. Instead, it is tested during the analysis of every following word until a word is found that has not fulfilled any prediction when the comma end-wipe activator is tested. Only then is the comma end-wipe activator wiped from the pool and the comma end-wipe sentinels finally returned to the continue clause mode. While a comma end wipe is in the continue clause mode, a word is labeled an arbitrary choice if it cannot fulfill any prediction located above the comma end wipe. If such an event takes place, all the predictions above the comma end wipe are wiped from the pool. However, all predictions below the comma end wipe remain unaffected. Thus, the analysis of a nested subordinate clause might be in error even though the analysis of the main clause can be carried out correctly.

### C. The Subordinate Clause

Subordinate clauses fall into two categories. those headed by relative pronouns and those headed by conjunctions, called relative conjunctions

to emphasize the parallel with relative pronouns. If a subordinate clause were introduced only by a relative conjunction and the conjunction were the first word of the clause, the mechanism necessary to predict subordinate clauses would be quite simple. The comma would make three predictions:

- (1) comma end-wipe activator;
- (2) relative conjunction;
- (3) comma end wipe.

If the relative conjunction prediction were fulfilled, the syntactic role would make the necessary subject, predicate head, and object predictions for the identification of the elements within the clause.

This simple scheme is inadequate for the analysis of a subordinate clause with a relative pronoun or a conjunction such as *ли*, as in the sentence *он не помнит, видел ли он его*, where the conjunction is not the initial word of the subordinate clause. In the clause *которая принимается...* (Figure 69) the relative pronoun *которая* both introduces the clause and acts as the subject of the clause. If only the first function of *которая* is identified when the relative pronoun is analyzed, then the subject of the clause cannot be found during the pass through the sentence.

The following technique was adopted for the predictive analysis program to circumvent this difficulty. Both a relative conjunction and a relative pronoun prediction are placed in the pool. Two predictions are not necessary. The relative conjunction and the relative pronoun can be combined into one prediction. *Что* is the only word in the dictionary at this time that is listed both as a relative conjunction and a relative pronoun. *Что*, although usually used as a relative conjunction as in the sentence *он сказал,*



что она делала свою работу (he said that she had been doing her work) can also be used as a relative pronoun as in the sentence он сказал, что она делала (he said what she had been doing).

The subject - predicate head - object predictions are placed in the pool at the same time. To forestall testing these predictions before the existence of a new clause has been established, the PSI of all these predictions are made inactive. After the analysis of the comma, the predictions to analyze subordinate clauses are ordered as follows:

- (1) comma end-wipe activator;
- (2) relative conjunction;
- (3) relative pronoun;
- (4)-(7) subject, predicate, and objects (inactive);
- (8) comma end wipe;
- (9...) (miscellaneous old predictions).

Now, if either the relative pronoun or relative conjunction prediction is fulfilled, the testing of the pool is suspended and the inactive predictions located below the relative pronoun are activated. If которая of the previous example которая принимается... is analyzed, it is first identified as the relative pronoun and a "K" is entered in word 9 as an indication. A success is not recorded by this intersection, so that которая can also be selected as the subject of the clause.

If the clause is introduced by a relative conjunction such as если in если дополнительное знание... (Figure 70), the relative conjunction prediction is fulfilled. A success is registered in the normal manner, and, of course, the activated predictions for the new clause remain in the pool to be analyzed during the testing of the words following the relative conjunction.

The intersection of the relative pronoun prediction with an alternative argument can follow the identification of the syntactic role. In the analysis of the clause *в основе которой лежит теория* (Figure 71), the comma end-wipe activator sentinel is not wiped from the pool when the preposition *в* is accepted by infinity. After *основе* is analyzed, the prediction pool would have the following predictions of consequence at the top:

- (1) noun complement;
- (2) comma end-wipe activator;
- (3) relative conjunction;
- (4) relative pronoun.

*Которой* fulfills the noun complement prediction and its syntactic role is determined. The relative pronoun prediction also intersects with *которой*. The inactive predictions are activated after which the testing cycle proceeds. No further intersections are recorded. Although the new clause has been positively identified, the comma end-wipe activator is still in the pool and is wiped only upon the analysis of the subsequent word, the verb *лежит*.

One last example, *свойства которых определяются...* (Figure 72), illustrates a difficulty that cannot be resolved on a single left-to-right pass. In this clause the subject *свойства* precedes the relative pronoun *которых* that acts as the noun complement of *свойства*. When *свойства* is being analyzed, there is no indication that a new clause is forthcoming and no intersections in the pool can be found. The necessary clue exists only in the following word.

Although this difficulty can be handled by use of an error-detecting and error-correcting mechanism, it must be pointed out that the error will

not be corrected if the forward analysis stops after the arbitrary choice has been labeled. The analysis must be allowed to proceed by some means to identify the existence of the relative pronoun. Only then can the error-correcting mechanism be put into effect. Otherwise, the analysis will try a host of alternative analyses, none of which will be correct.

A possible solution to this problem and the problem of analyzing a sentence consisting of several independent clauses separated by commas has been suggested. If the analysis of a comma, making the usual set of predictions, fails to help resolve the rest of the sentence, a second analysis of the comma can be tried. Thus the comma must fulfill another prediction by infinity which is normally entered in hindsight. Such a prediction, the clouser, has been created, although no tests have been made of its effectiveness. A comma accepted as a clouser predicts the necessary subject, predicate head, and object predictions with active PSI. Also, if desired, a relative pronoun prediction which can be fulfilled after the subject or object predictions might also be predicted if a comma is accepted as a clouser.

#### D. The Gerund Phrase

The gerund phrase, like the subordinate clause, is usually isolated from the rest of a sentence by commas. The initial word of this phrase is always a gerund and can be analyzed by predicting a gerund at the same time as the relative conjunction and relative pronoun. A typical example of a gerund phrase is превращаясь в атомы другого элемента (Figure 73). The ordinary predictions made by verbs are sufficient to analyze the rest of the phrase.

The gerund phrase and the subordinate clauses are the only structures predicted, surrounded by commas, with no syntactic links to the rest of the sentence in the present version of the program. These are therefore the only structures to be predicted by the comma. The first few predictions made by the comma in the present program are:

- (1) comma end-wipe activator;
- (2) gerund;
- (3) end wipe;
- (4) relative conjunction;
- (5) end wipe;
- (6) relative pronoun.

Several end-wipe sentinels have been inserted between the predictions. Thus the gerund prediction is wiped if a new clause is identified and both the gerund and relative conjunction are wiped if the new clause contains a relative pronoun.

#### E. Initial Predictions

The combination of predictions for a clause with the predictions made by the comma provide the set of initial predictions that are inserted into the prediction pool before the analysis of the sentence is begun. A main clause must exist in every sentence. It is possible, however, that a sentence will start with a subordinate clause or a phrase structure. A prepositional phrase can be accepted by infinity but a gerund phrase must be predicted. The predictions made by a comma, when placed before the predictions for the main clause, allow this type of sentence to be analyzed. The initial prediction pool consists of eighteen predictions:

- |   |                                  |
|---|----------------------------------|
| (1) comma end-wipe activator;             | (10) predicate head (inactive);  |
| (2) gerund;                               | (11) indirect object (inactive); |
| (3) end wipe;                             | (12) comma end wipe;             |
| (4) relative conjunction;                 | (13) subject;                    |
| (5) end wipe;                             | (14) left object (instrumental); |
| (6) relative pronoun;                     | (15) left object (accusative);   |
| (7) subject (inactive);                   | (16) predicate head;             |
| (8) left object (instrumental)(inactive); | (17) indirect object;            |
| (9) left object (accusative)(inactive);   | (18) end of sentence.            |

(The number of predictions would be reduced by four if the left object predictions were combined as well as the relative conjunction and relative pronoun predictions.)

If a sentence starts with the main clause, none of the first eleven predictions is fulfilled. They are all subsequently wiped by the comma end-wipe sentinel which has been put into the end clause mode by the comma end-wipe activator. But if some structure other than the main clause starts the sentence, the last six predictions are held in abeyance until the initial structure has been fully analyzed.

#### F. The Participial Phrase and the Modifier

The participial phrase and the gerund phrase differ in the predictive syntactic analysis technique because the participial phrase is predicted by a preceding noun. Subordinate clauses and other types of phrases which are not now syntactically linked to the rest of the sentence will eventually be handled by a more sophisticated version of the program. The distinction, at the present time, is only temporary.

Every noun predicts a modifier that agrees with the noun in case and number. Due to the nature of the prediction pool, the later a noun occurs in the sentence, the closer to the top of the pool is the modifier prediction made by the noun. The modifier prediction is usually fulfilled by a participle following a comma. Thus the modifier prediction is initially given a 50 PSI which makes it inactive. The prediction is activated by the comma end-wipe activator at the same time that the mode of the comma end wipe is altered. In this manner the modifier has a 00 PSI when the word after the comma is tested.

Two participles, помещенные в... and возникающих в... (Figure 74), illustrate the modifier prediction. Помещенные fulfills the modifier prediction made by the noun статьи and activated by the comma between the two words. Similarly, возникающих fulfills the prediction made by the noun проблемах and activated by the comma following the noun. Multiple modifier intersections are common since every noun makes a modifier prediction. In the phrase возникающих при... (Figure 75), the participle intersects with the modifier predictions of the nouns задач and схем. The former intersection is preferred because задач follows схем in the sentence. A syntactic analysis cannot distinguish the relative validity of "problem arising..." or "circuit arising..." although the choice is obvious to the reader.

The present test for modifiers includes tests for case and number but not for gender. This is an oversight since a true modifier must agree with its antecedent in gender. This oversight resulted in three intersections between the alternative argument of называемой in называемой кодом числа (Figure 76) and the modifier predictions in the pool. Modifier predictions

with the preceding nouns *напряжения*, *последовательности*, and *виде* were noted. Of these, only the intersection with *последовательности* also agreed in gender.

The modifier prediction has accounted for the analysis of other nonparticipial modifiers as well. Simple adjectival appositives can also fulfill the modifier prediction if they occur after a comma. The phrase *ненужных для регистрации сигнала* (Figure 77) is analyzed as an appositive to the noun *частот*.

The modifier prediction is troublesome when a series is being analyzed. If this series consists of three or more items, so that commas are used to separate all but the last two items, these items are selected as modifiers. Sometimes the items in the series agree only in case and not in number, in which case this problem does not arise. Thus, the series *фольги, ножницы и клей* (Figure 78) cannot be analyzed as modifiers while the series *фильтры, направленные ответвители, гибридные схемы и т.п.* (Figure 79) can be so analyzed.

An idea for analyzing a series has been suggested but only partially tested. A comma can be accepted as an infinite conjunction (always listed in hindsight). In this way a set of items separated by commas and agreeing in case can be linked together, using the compound predictions (see Part 7). Until error-correcting routines are utilized, this approach cannot be checked.

The modifier prediction is particularly affected by words intervening between itself and the preceding comma because of its OO PSI. The modification of the prediction pool by these intervening words results in the modifier prediction being wiped from the pool. The most common instance is when the participle is negated by the adverb *не* as in *не встречающаяся в*

случае ... (Figure 80). Встречающаяся is a participle that should fulfill the modifier prediction of its antecedent трудность. A solution to this problem would be to change the PSI to 03 and follow the modifier prediction with an end-wipe sentinel.

Adjectives and participles that fulfill modifier predictions make the usual set of predictions even though a participle that fulfills a modifier prediction cannot have a master. A distinct example of an erroneously fulfilled master prediction occurs in the clause соответствующих десяти различным дальностям (Figure 81). Десяти is actually the initial adjectival numeral in a numeral basic phrase and should fulfill the dative object prediction generated by соответствующих. In the present analysis, десяти is selected as the master of the participle and the dative object prediction is wiped from the pool in the process. The following word различным is then accepted as an arbitrary choice, indicating the error. For the analysis to proceed with no error indication, it would be necessary for the adjectival homograph of десяти to fulfill the object prediction.

## 7. Compound Structures

Any structure from individual words to entire clauses can be compounded, and every such possibility must be provided for in the prediction pool. Four coordinating conjunctions, и, или, а, and но, are presently recognized by the predictive analysis program. A compound structure might follow any of the four conjunctions. Such a conjunction can occur at any point in the analysis of a sentence and must be predicted by infinity. The name infinite conjunction has been assigned for this purpose.



Since a compound structure can occur only following an infinite conjunction, a mechanism whereby a compound prediction cannot be fulfilled at any other time is essential. The basic tool for the identification of such a structure is the inactive prediction (with a PSI greater than 49). Every compound prediction is marked 99 PSI, which is reserved for this purpose only. This prediction cannot be tested until the PSI has been changed and the prediction activated. When an infinite conjunction is analyzed, a new sentinel, the 99-activator is placed at the top of the pool. When the 99-activator is tested, it activates all the compound predictions by changing the PSI from 99 to 49. The 99-activator is then wiped from the pool subject to the same restraints as the comma end-wipe activator (see Part 6). The compound predictions remaining in the pool after the testing cycle has been completed are restored to their original 99 PSI until another infinite conjunction is analyzed.

In predictive syntactic analysis the compound structures are those segments following an infinite conjunction, and not the entire string including the conjunction and the segments on either side.

Virtually every analyzed word makes some type of compound prediction. (Mention of the compound predictions was omitted previously in this section as it was felt that consideration of them would have complicated the description of the analyses of other structures.) Compound predictions that can no longer be fulfilled are wiped from the pool in the normal manner. Thus the number of compound predictions in the pool at any time is usually significantly less than the number of analyzed words in a sentence.

## A. Predicting with Compounding Conjunctions

A simple example of the compound analysis process is illustrated by the phrase на наблюдениях и свидетельствах (Figure 82). The noun наблюдениях is analyzed as the preposition complement. As a noun, наблюдениях predicts (1) a noun complement, (2) an inactive modifier, and (3) an agent as directed by the "R4" in word 8. Because the syntactic role of the noun is preposition complement, two additional predictions are made: (4) a compound preposition complement in the locative case with 99 PSI and (5) an end-wipe sentinel. The sentinel will wipe all these predictions that are not subsequently fulfilled.

The following word, the conjunction и, does not fulfill any of the first four predictions. However, и is accepted by infinity and the end-wipe sentinel does not wipe the predictions. When the prediction pool is updated, the noun complement is wiped and a 99-activator is placed at the top of the pool which now is ordered as follows:

- (1) 99-activator;
- (2) modifier (50 PSI);
- (3) agent;
- (4) compound preposition complement (locative)(99 PSI);
- (5) end wipe;
- (6...) (miscellaneous old predictions).

The alternative argument of the next word, the noun свидетельствах, cannot be accepted by infinity, so that the 99-activator changes all 99 PSI to 49 PSI. The 99-activator is then wiped from the pool. The testing process continues and the alternative argument intersects with the now active compound preposition complement prediction.

Compound predictions of government structures are simpler than those of agreement structures. As was shown in the last example, the compound preposition complement prediction is merely another prediction of a basic phrase in the same case as the preferred argument of the word making the prediction. The compound singular and plural nouns in *уменьшить размеры и* *ее* (Figure 83) are typical. The problem of predictions which must agree in number arises since two compounded singular words are equivalent to a single plural word.

A solution to this problem has been created for the case of compound subjects as in the clause *отсутствие...и постоянство...обеспечиваются...* (Figure 84). The analysis of *отсутствие* as the subject causes the predicate head prediction to be modified so that only a singular neuter predicate can fulfill the prediction. A compound subject prediction is also entered in the pool. After being activated by *и*, the compound subject prediction is fulfilled by *постоянство*. It is now necessary to modify the predicate head prediction a second time so that a plural rather than a singular predicate fulfills it. *Обеспечиваются* then fulfills the remodified predicate head prediction.

Although only compound subjects have been handled in this manner up to now, the change in number has to be considered in all agreement predictions. The agreement between an adjective and its master is another example. The singular adjectives can have one plural noun master. Conversely, a plural adjective can be followed by two singular compounded noun masters. Although such cases are rare, several examples have been noted. The first instance is illustrated by the phrase *симметричного и несимметричного типов* (Figure 85) and the second by *своя скорость и положение* (Figure 86).

A sentence with several interesting compounding examples is illustrated in Figure 87. The word *и* appears four times in the sentence. The compound preposition complement and compound verb complement are representative of ordinary government compounding. A third compound structure is the pair of compound prepositions *для*. (The fourth use of *и* is considered in Part 7B.) When the prepositions are compounded, the two prepositional phrases offset each other. A compound preposition is presently limited to a second occurrence of the identical preposition after an infinite conjunction. The limitation does not, however, take into account the essential equivalence of the prepositions *в* and *во* and of *о*, *об*, and *обо*. Other prepositions may be compounded also. Prepositions should be divided into groups by meanings, e.g., prepositions of location such as *на*, *под*, *за*, etc. A preposition belonging to one such group could compound with any other preposition of the same group.

Other uninflected forms can also be compounded in the language. Compound adverbs do not exist in the program. A rarer compound structure that was discovered among the analyzed sentences was the compound relative conjunction *что* in the sentence *испытания показали, что..., и что...* (Figure 88).

### B. Infinite Conjunction Homography

Several functional difficulties arise because the infinite conjunction *и* is homographic with the adverb *и* and also the relative conjunction *и*.

When *и* is used adverbially as it is in the fourth instance *сборник и в настоящем...* (Figure 87), the word following *и* should not intersect with

a compound prediction. As an adverb, и serves as a stress on the following word or phrase. Particularly, since the English translation of и used as an infinite conjunction is usually "and," and as an adverb it is usually "also" or "even," the analysis program must distinguish between the two homographs.

It would be interesting to test whether or not an infinite conjunction can be identified by the intersection with a compound prediction by the word following the infinite conjunction. The test would require that all other predictions be deactivated when the 99 PSI predictions are activated. If there are no intersections, the analysis of the infinite conjunction is in error and must be corrected.

Such an approach would also help solve a presently ambiguous situation. That is, when two nouns are compounded by an infinite conjunction they are always analyzed correctly; but when two adjectives are compounded in the same way they are analyzed in a different manner. The second adjective is analyzed as the master of the first. Узлов и элементов (Figure 89) and то или иное расстояние (Figure 90) represent the two possibilities. The different analyses result from the different predictions generated by nouns and adjectives. By the time that элементов is analyzed, the noun complement prediction made by узлов is no longer in the pool and the compound noun complement prediction is the first prediction fulfilled. In contrast, the master prediction generated by то is above the compound preposition complement prediction when иное is analyzed. The compound preposition complement prediction intersection is thus listed in hindsight. Although the ambiguity might be considered genuine in the latter case, the

compound syntactic role should be preferred since it provides more information about the syntax of the structure.

Such an approach to the problem would help to solve some of the residual object predictions. Predictions of objects of adjectives and nouns occur randomly in texts. These predictions are not of high priority but they often interfere in the analysis because of their relatively high position in the pool. A test whereby the word after an infinite conjunction could be fulfilled only by a compound prediction would counteract the effect of the order of the predictions in the pool. As an example in the phrase с лучшей добротностью и лучшей экранировкой (Figure 91), добротностью predicts a dative object. The и that follows sets up the mechanism for activating the compound predictions. The mechanism should be stronger; only a compound prediction is really being looked for since и was selected as an infinite conjunction. As it is now, the object prediction is above the compound preposition complement prediction and an error in analysis is subsequently indicated by the arbitrary choice designation of экранировкой.

A second prediction pool only for compound predictions has been considered recently in informal discussions. With two pools it would be necessary to update the second pool every time the first pool was updated. Also, compound predictions which could no longer occur would have to be eliminated promptly. Thus both pools would have to be treated in parallel, and their distinction would become completely obscured.

If an analysis technique whereby an infinite conjunction must be followed by a compound construction is adopted, it is necessary to remember that the first adjective of a compounded pair of adjectives will not have

a master. This desired result is obtained now when adjectival numerals are compounded since an adjectival numeral (see Part 3E) is not recognized as a potential numeral master. Thus, in the phrase от одного или нескольких... (Figure 92), нескольких is recognized as only the compound preposition complement and not the master of одного. In the process the master prediction generated by одного is wiped from the pool and recorded as an error in hindsight.

The third homograph of the infinite conjunction - adverb - relative conjunction set necessitates still another form of analysis. If a coordinating conjunction is used to compound two entire clauses, the coordinating conjunction acts as a relative conjunction. According to the hypothesis that commas separate individual clauses, such a situation can arise only if the infinite conjunction immediately follows a comma. A test is made to check whether or not the initial clause has been completely fulfilled. Since clauses connected by infinite conjunctions are independent, the initial clause cannot be continued after the second clause is completed. The test of a completely analyzed clause is that the subject and predicate of the clause have been identified and those predictions are no longer in the pool. If those predictions cannot be found, a relative conjunction intersection is possible. Such a situation exists in the sentence она хотела идти, а другие продолжали говорить (Figure 93).

Such an approach is not without inherent dangers. A counterexample of the last example was not difficult to find: the sentence в сборнике помещена также статья...и статья... (Figure 94). The и immediately follows a comma and the subject and predicate head predictions of the clause have

been fulfilled. И is taken to be the relative conjunction and the second clause is never successfully analyzed. Since no predicate head can be found, the analysis should be able to select и as the infinite conjunction and treat the second статья as the compound subject of the initial clause.

#### 8. Miscellaneous Constructions Analyzed by the Predictive Analysis Program

Previously in this paper, various grammatical rules have been grouped into classes. Several of the rules in the program do not fit into these classes and will therefore be discussed separately here.

##### A. The Comparative Adverb and Чем

A comparative adverb, like a negative adverb (Part 5), can make predictions, since it is followed by a noun phrase or a clause. To analyze the construction that follows the comparative adverb, a comparative complement is predicted. This prediction can be fulfilled by a genitive basic phrase, the conjunction чем, or a comma.

The use of the genitive basic phrase as a comparative complement is illustrated in the sentence вы на три года старше моего друга (Figure 95). The comparative adverb is used as the predicate in this sentence, a construction that the predictive analysis program does not yet recognize (Part 6). The same type of sentence with a verbal predicate would be он был старше моего друга.

Whenever the comparative complement prediction is fulfilled by чем, the analysis of the comparative complement structure can be continued further. A distinction has been made when a comma does or does not intervene



between чем and the comparative adverb. If there is no comma, it is assumed that the phrase following чем is parallel to some phrase that preceded чем. Thus ее подруга is nominative and singular, parallel to она in the sentence она красивее чем ее подруга (Figure 96).<sup>\*</sup> Here too, the comparative adverb is used as the predicate. The compound predictions are utilized to predict the parallel construction since the grammatical information contained in the compound predictions is exactly what is desired. No attempt has been made to change the name of the syntactic role in word 9 and so ее подруга appears as a compound subject. The operation to identify the parallel construction is carried out by placing a 99-activator (see Part 7) at the top of the pool after чем has been analyzed. This is done only if чем fulfills a comparative complement prediction.

The intersection of a comma with a comparative complement prediction is meaningless and is a residue of an earlier attempt to account for the comma that can intervene between the comparative adverb and чем such as слабее, чем... (Figure 97). A чем following a comma is presently not analyzed correctly. This could be overcome by allowing the comma to fulfill some other prediction that would then allow the comma to carry forward the comparative complement prediction to the word after the comma. The чем would then make the suitable predictions for either a parallel basic phrase or for an entire new clause.

The genitive basic phrase and the чем can both follow the comparative adverb in the same sentence as in the clause ...более трудностей, чем...

---

\* The "INCOMPAT EE" in the 10-word item of красивее means that the stem красив-, stored in the dictionary, is listed as an adjective but that the affix -ее is an adverbial and not an adjectival ending.

(Figure 98). The present analysis program can identify only one comparative complement. By having two separate predictions made which could be fulfilled independently, a structure as illustrated in Figure 98 could be correctly analyzed.

#### B. Parenthetical Comments

A set of sentinels has been developed to separate predictions in the pool which refer to different phrase and clause structures. The most obvious use of such sentinels is to isolate predictions of structures that are explicitly isolated in the sentence itself. A pair of parentheses and a pair of quote signs are the most common symbols used to isolate structures. A pair of dashes is also commonly used in Russian.

Since a parenthetical comment can occur anywhere in a sentence, a left parenthesis can be predicted only by infinity. The analysis of a left parenthesis precludes the continuation of the analysis of the rest of a sentence until a right parenthesis has been identified. This is achieved by predicting a right paren end wipe. This, like the end-of-sentence prediction, is a combination prediction and sentinel. Only a right parenthesis can fulfill the right paren end wipe, and the testing of the prediction pool cannot go beyond the right paren end wipe. Thus the right paren end wipe deters the testing of the older predictions until after the analysis of the right parenthesis which causes the prediction sentinel to be wiped from the pool. In the clause *расчет электрических параметров...в них* (Figure 99), the parenthetical series (*характеристического сопротивления, затухания, и т.п.*) does not interfere with the analysis. After the comma outside the parentheses,

the predictive analysis program tests the old predictions and identifies "параметровнеоднородностей" as the compound noun complement of параметров or полосковых линий, a choice that can be resolved on semantic grounds only. The compound noun complement is not a real word, but is the result of a typographical mistake where two words параметров and неоднородностей have been run together. This example is still the best one in the analyzed texts. It indicates the effect of the right paren end-wipe sentinel since the compound predictions from the words within the parentheses are no longer in the pool to intersect with the alternative arguments of the pseudoword.

By the present program, the analysis of the structure within the parentheses is incomplete. The structure can exist as one of three types: (1) it is syntactically unrelated to the sentence (as in the example); (2) it can be predicted in the normal manner since it is a part of the sentence (as the parenthetic comments in this sentence); or (3) it is a complete sentence in itself. Under the present scheme if a word cannot be analyzed by the predictions located above the right paren end wipe, it is categorized as an arbitrary choice. This crude approach is adequate only for parenthetic structures of the first type. More commonly, the parenthetic structure is a participial or prepositional phrase and the parentheses are equivalent to a set of commas. The equivalence holds also if the parenthetic structure is an entire clause, either dependent or independent. This equivalence can be utilized to further the analysis of parenthetic constructions.

The identification of parenthetic structures has been experimentally limited to actual parentheses. Other symbols that serve identical purposes

can be recognized with the same predictions. The quote signs which are spelled out "\$QUOTE" and "\$UNQUOTE" in texts analyzed by the predictive analysis program (Figure 100) are one such set of symbols and the two dashes "--" (Figure 101) are another. The quotes are ignored in the analysis since they are dollar-sign items. This is a class of items which consists of remarks by the typists who prepare texts. A "QUOTE" and an "UNQUOTE" are dollar-sign items because the typist must write out the words instead of using the quotation-marks symbol ("). The dashes appear as missing words since they are considered an unknown type of punctuation mark. The dash is not as accurate an indicator of parenthetical remarks as the parentheses or quotes since it can be used for other purposes, quite often singly and not necessarily in pairs.

#### 9. The Analysis of Complete Sentences

In the preceding discussions, the predictive syntactic analysis program has been dissected into minute segments which have been treated individually. With such an approach the analysis of entire sentences has been largely neglected. A number of complete sentences have been illustrated among the examples. Sentences with errors in their analyses appear in Figures 5, 7, 21, 42, 46, 49, 61, 62, 67, 87, 88, 94, 96, and 97. The types of error are discussed in the text. Other sentences analyzed correctly appear in Figures 13, 19, 38, 43, 44, 45, and 90. Both successfully and unsuccessfully analyzed sentences have been included to give some feeling of the present power and potential value of the predictive analysis program. The reader should be able to reproduce the analysis of complete sentences,

as well as the analysis of any sentence segments from other figures, with the complete set of rules given in Appendix A.

Another set of complete sentences analyzed by the program have been included (Figures 102-112). These sentences, taken from texts OOH and OOK, are interesting examples analyzed by the existing program. Of the eleven sentences, only the three in Figures 102, 104, and 108 have been analyzed correctly. Various errors, both automatically detected and undetected, exist in the analyses of the eight other sentences.

Several of the detected errors can be corrected easily. The wiped numeral master prediction originating from the subject *одним* in the sentence beginning with *одним из средств...* (Figure 103) indicates that *одним* should have been chosen as a nominal and not as an adjectival. *Поэтому* in the sentence *поэтому освоение полосковых линий будет означать...* (Figure 109) should have been selected as an adverb instead of as a relative conjunction. The wiped initial subject and predicate head predictions serve to indicate this error. The error in the verb phrase *нанесен проводящей краской...* (Figure 112) has been made quite clear by the wiped object master prediction originating from the adjective *проводящей*. The adjective should have been selected as the instrumental agent of *нанесен* instead of the genitive object of the same verb complement.

Although two subject predictions are wiped during the analysis of the sentence *очевидно, что подобная же задача возникает...* (Figure 106), there is no error in the analysis. The predicate head of the main clause, the short-form adjective *очевидно*, need not have an explicit subject; and the second subordinate clause *когда изучают процесс химической реакции* also

has no subject. To detect that the latter clause is correct presents a problem.

The sentence containing the noun phrase вопросам точного и приближенного определения... (Figure 105) contains a "borderline" error. This sentence raises a question as to whether и should be translated by "and," since no compound prediction was fulfilled.

The sentence in Figure 110 contains several errors of the type already described here. Многие is analyzed in the same manner as приближенного in Figure 105; and которой is selected as an adjectival rather than as a nominal, as was одним in Figure 103. A third error in this sentence is the result of selecting или as a relative conjunction instead of as an infinite conjunction. Теория (word 280) is then incorrectly selected as the subject of the new clause instead of the compound subject of the first subordinate clause. However, no predicate is ever found and this should be sufficient information to reject the analysis.

The last two examples in Figures 107 and 111 contain errors which cannot be syntactically detected. In the clause какие богатые возможности могут представить полосковые линии... (Figure 107), the subject has been selected as the object and the left object has been selected as the subject. In the verb phrase позволяет во многих случаях значительно уменьшить размеры... (Figure 111), уменьшить is selected as the verb master of случаях instead of the verb master of позволяет. Some form of semantic analysis is required to resolve both these problems.

A reader who wishes to study the analyzed texts abstracted in this section may obtain upon request prints of the entire texts OOH and OOK as well as the four others mentioned.

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\* Throughout these references the following abbreviations are used:  
NSF-3, 4, etc. - Mathematical Linguistics and Automatic Translation,  
Reports to the National Science Foundation by the Compu-  
tation Laboratory of Harvard University, Cambridge, Mass.

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## APPENDIX A

### RULES FOR PREDICTIVE SYNTACTIC ANALYSIS

The set of grammatical rules which are represented by the subroutines in the experimental predictive syntactic analysis program are presented in this appendix. For the reader to simulate the actions of the analysis program, he needs only these rules, the coding manual,<sup>17</sup> and a sample of text material that has been looked up in the Harvard Automatic Dictionary with the continuous dictionary run program.<sup>21</sup>

The rules (and subroutines) have been divided into three categories: predictors, testers, and sentinels. A different format is used to describe each of the three categories.

An illustration of the use of this appendix will help familiarize the reader with the technique. Consider the process when a subject prediction is being tested against the alternative argument /noun, nominative, singular, masculine/ of a noun such as студент, the first word in a hypothetical sentence.

The reference information for the subject tester (prediction) indicates that the subject prediction can be made by one of three predictor subroutines: initial, comma, or clauser. The initial predictor makes two subject predictions, one active and one inactive, the comma predictor makes an inactive subject prediction, and the clauser predictor makes an active subject prediction. The subject prediction can be modified either by the verb predicate head predictor or by the adjective predicate head predictor.

The testing criteria indicates that the subject prediction can be fulfilled either by a noun, adjective, participle, numeral, pronoun, or by

a verb infinitive. The formal definitions of these six classes can be found under the appropriate predictor headings (i.e., noun predictor, adjective predictor, etc.). If the subject prediction has been modified by either of the predicate head predictors there are further limitations. Then the subject prediction can be fulfilled by a verb only if the subject tester is modified to be third person, singular, and neuter; it can be fulfilled by a pronoun only if it is modified to be in the same person as the pronoun; and it can be fulfilled by any of the other four types of words only if it is modified to be in the third person.

There are additional tests that must be made before the prediction can be fulfilled. The number must be tested where applicable, and, of course, the case must be nominative. Wherever appropriate the gender is also compared. If the predicate head has already been fulfilled (and the subject prediction modified) character position 3 of the second grammar word has been modified; likewise, if the subject must be a verb (this can only occur with a compound subject) character position 2 has been modified.

No particular action outside of the normal testing cycle is required with this prediction. The mark to be placed in word 9 of the analyzed 10-word item is listed as the "syntactic role mark."

With the suggested example, the subject prediction is fulfilled. `Студент` has a nominative alternative argument. Since `студент` is the first word of the hypothetical sentence the subject prediction is unmodified and the test for case is the only significant test.

The testing cycle now proceeds to test the alternative arguments of `студент` against the other predictions in the pool. The syntactic role of

subject is given to `сгудент` in this example since the intersection just described is the first one.

After the testing cycle has been completed, new predictions are put into the pool. The correct predictor, with which to start making new predictions, is indicated by the class that "fulfilled" the syntactic role, i.e., the noun `сгудент`.

The reference information for the noun predictor indicates that every word with an "N" in character position 1 or a "PN" in character positions 1 and 2 of word 5 of the 10-word item makes the listed predictions. Among the tester subroutines that can be fulfilled by nouns listed next, the subject tester can be found. The noun predictor subroutine may also be called in by a previous predictor subroutine, either a pronoun or a numeral predictor.

The predictions made by the noun predictor are listed under "action taken." The dictionary entry of `сгудент` does not have any object, agent, or verb master government marks, so that only two new predictions are made, a noun complement and a modifier. Any grammatical information needed to be stored with the noun complement and modifier testers is listed under the headings of the two testers, respectively.

Since `сгудент` was chosen as the subject, after the two new predictions are made, a second predictor subroutine, the adjective-noun subject predictor must be called in.

This second predictor subroutine makes two more new predictions, a compound subject prediction and an end-wipe sentinel, and the new pool is headed by these new predictions in the order predicted: noun complement, modifier, compound subject, and end wipe.

The adjective-noun subroutine also modifies the predicate head, and in this particular instance marks the predicate head so that only a third person, singular, and masculine predicate can fulfill the prediction. Since `студент` was not selected as the compound subject, no other action is taken.

There are no other predictor subroutines to be called in so that the old prediction pool can be modified and re-inserted below the four new predictions. The subject prediction, having been fulfilled, is wiped and all the remaining old predictions are appended to the four new ones.

With the creation of a new prediction pool, the predicting cycle is complete and the alternative arguments of the next word in the sentence can be tested against the new set of predictions.

The analysis of the noun `студент` is typical of the predictive syntactic analysis program. Exceptions to the procedure just outlined are always explicitly marked at the appropriate places. After these special actions are performed control returns to the ordinary testing or predicting cycle, again unless specifically indicated to the contrary.

LIST OF SUBROUTINES

	<u>Predictors</u>	<u>page</u>
Initial . . . . .		I-103
Clauser . . . . .		I-104
Comma. . . . .		I-105
Noun . . . . .		I-106
Pronoun . . . . .		I-107
Adjective . . . . .		I-108
Participle . . . . .		I-109
Verb . . . . .		I-110
Adverb . . . . .		I-111
Negative. . . . .		I-112
Negative adverb . . . . .		I-112
Numeral . . . . .		I-113
Numeral master. . . . .		I-114
Preposition. . . . .		I-114
Gerund . . . . .		I-115
Infinite conjunction. . . . .		I-115
Relative conjunction. . . . .		I-116
CHEM (chem) . . . . .		I-117
Modifier. . . . .		I-117
Object . . . . .		I-118
Left object. . . . .		I-119
Indirect object . . . . .		I-120
Agent. . . . .		I-120

## LIST OF SUBROUTINES (continued)

	<u>page</u>
Noun complement . . . . .	I-121
Preposition complement. . . . .	I-121
Adjective-noun subject. . . . .	I-122
Pronoun subject . . . . .	I-123
Verb subject . . . . .	I-124
Verb predicate head. . . . .	I-124
Adjective predicate head . . . . .	I-125
BYT' (быть) . . . . .	I-126
Infinitive predicate head. . . . .	I-127
Verb complement . . . . .	I-127
Verb master . . . . .	I-128
Preposition object . . . . .	I-128
\$---\$ . . . . .	I-129
Left paren. . . . .	I-129
End of sentence . . . . .	I-130

Testers

Subject. . . . .	I-131
Predicate head . . . . .	I-132
Infinitive predicate head. . . . .	I-133
Master . . . . .	I-134
Numeral master . . . . .	I-135
Verb master . . . . .	I-136
Verb complement . . . . .	I-137
Modifier . . . . .	I-138
Object . . . . .	I-139

LIST OF SUBROUTINES (continued)

	<u>page</u>
Left object . . . . .	I-140
Indirect object . . . . .	I-141
Agent . . . . .	I-142
Noun complement . . . . .	I-143
Preposition complement. . . . .	I-144
Chain numeral. . . . .	I-145
Negative . . . . .	I-146
Comparative complement. . . . .	I-147
Preposition object . . . . .	I-148
Compound preposition . . . . .	I-149
Gerund . . . . .	I-150
Relative conjunction . . . . .	I-151
Relative pronoun. . . . .	I-152
Infinity . . . . .	I-153
Arbitrary choice. . . . .	I-154
End of sentence . . . . .	I-155

Sentinels

End wipe . . . . .	I-156
Comma end wipe . . . . .	I-157
End-of-sentence end wipe . . . . .	I-158
(Right paren tester subroutine). . . . .	I-159
Right paren end wipe . . . . .	I-160
Comma end-wipe activator . . . . .	I-160
99-activator . . . . .	I-161

Summary of Prediction Span Indicators (PSI) used in Experimental Predictive  
Syntactic Analysis Program

- 00 The prediction must be fulfilled by the next word or not at all.
- 01 The prediction must be fulfilled during the analysis of the sentence.
- 02 The prediction can be fulfilled more than once and is not to be wiped when fulfilled.
- 03 The prediction may be fulfilled at any time but need not necessarily be fulfilled.
- 20-23 Mutually exclusive predictions (otherwise identical to 00-03 PSI).
- 49 Active compound prediction.
- 50-53, 70-73, 99 Inactive predictions (activated by activator sentinels).

Summary of Abbreviations

- PSI Prediction Span Indicator.
  - Cpd compound.
  - M.F. mutually exclusive.
  - CPx Character position ( $1 \leq x \leq 12$ )
- |   |   |   |   |   |   |   |   |   |    |    |    |
|---|---|---|---|---|---|---|---|---|----|----|----|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 |
|---|---|---|---|---|---|---|---|---|----|----|----|
- FWx Machine word of analyzed 10-word item ( $0 \leq x \leq 9$ ).
  - TWx Machine word of unanalyzed 10-word item ( $0 \leq x \leq 9$ ).
  - GWx Grammar word (as kept in experimental program) ( $1 \leq x \leq 3$ ).



INITIAL PREDICTOR SUBROUTINE

Assembly Address: INITLA

Reference Information

Called in by the following predictor subroutines:

1. Program initializer.
2. End of sentence.

Action Taken

- |           |   |   |
|-----------|---|---|
| Predicts: | 1. Comma end-wipe activator.                      | 13. Subject.                            |
|           | 2. Gerund.  | 14. M.E. Left object<br>(instrumental). |
|           | 3. End wipe.                                      | 15. M.E. Left object<br>(accusative).   |
|           | 4. Relative conjunction.                          | 16. Predicate head.                     |
|           | 5. End wipe.                                      | 17. Indirect object.                    |
|           | 6. Relative pronoun.                              | 18. End of sentence.                    |
|           | 7. Subject (inactive).                            |   |
|           | 8. M.E. Left object<br>(instrumental) (inactive). |   |
|           | 9. M.E. Left object<br>(accusative) (inactive).   |   |
|           | 10. Predicate head (inactive).                    |   |
|           | 11. Indirect object (inactive).                   |   |
|           | 12. Comma end wipe (end clause<br>mode).          |   |

Other Action:

1. Store "IIC" in comma serial number.

Notes

Predictions 1-12 are made with serial number "IIC",  
others with "III".

---

## CLAUSER PREDICTOR SUBROUTINE

Assembly Address: CLASER

Reference Information

Characterized by (syntactic role mark):

1. "," in CPl of FW5 and "INF CLAUSER" in FW9.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

- Predicts:
1. Subject.
  2. M.E. Left object (instrumental).
  3. M.E. Left object (accusative).
  4. Predicate head.
  5. Indirect object.
  6. Comma end wipe (continue clause mode).

Other Action:

1. Before making predictions, wipe all predictions in pool with serial same as comma serial number.
  2. Store serial number of preferred argument in comma serial number.
-

COMMA PREDICTOR SUBROUTINE

Assembly Address: COMMAΔ

Reference Information

Characterized by (syntactic role mark):

1. ", " in CPl of FW5 and "INF COMMA" in FW9.

Accepted by the following tester subroutines:

1. Comparative Complement.
2. Infinity.

Action Taken

Predicts: 1. Comma end-wipe activator. 9. M.E. Left object  
2. Gerund. (accusative) (inactive).  
3. End wipe. 10. Predicate head (inactive).  
4. Relative conjunction. 11. Indirect object  
5. End wipe. (inactive).  
6. Relative pronoun. 12. Comma end wipe  
7. Subject (inactive). (end clause mode).  
8. M.E. Left object  
(instrumental) (inactive). -

Other Action:

1. Before making predictions, wipe all predictions in pool with serial same as Comma Serial Number.
  2. Store serial number of preferred argument in Comma Serial Number.
-

## NOUN PREDICTOR SUBROUTINE

Assembly Address: NOUNΔΔ

Reference Information

Characterized by (syntactic role mark):

1. "N" in CPl of FW5.
2. "PN" in CPl-2 of FW5.

Accepted by the following tester subroutines:

- |                       |                                   |
|-----------------------|-----------------------------------|
| (Cpd) 1. Subject.     | (Cpd) 7. Indirect object.         |
| 2. Master.            | (Cpd) 8. Agent.                   |
| 3. Numeral master.    | (Cpd) 9. Noun complement.         |
| (Cpd) 4. Modifier.    | (Cpd) 10. Preposition complement. |
| (Cpd) 5. Object.      | 11. Comparative complement.       |
| (Cpd) 6. Left object. | 12. Arbitrary choice.             |

Called in by the following predictor subroutines:

- |                       |                       |
|-----------------------|-----------------------|
| 1. Pronoun (nominal). | 2. Numeral (nominal). |
|-----------------------|-----------------------|

Action Taken

- |                               |                             |
|-------------------------------|-----------------------------|
| Predicts: 1. Noun complement. | 3. Objects, agent, and verb |
| 2. Modifier (inactive).       | master with 03 PSI as       |
|                               | directed by FW8.            |

Call to (if not master):

- |                           |                            |
|---------------------------|----------------------------|
| 1. Adjective-noun subject | 4. Left object.            |
| (identical with pronoun   | 5. Indirect object.        |
| subject).                 | 6. Agent.                  |
| 2. Modifier.              | 7. Noun complement.        |
| 3. Object.                | 8. Preposition complement. |
- 
-

PRONOUN PREDICTOR SUBROUTINE

Assembly Address: PPRONΔ

Reference Information

Characterized by (syntactic role mark):

1. "P" in CP1 of FW5.

Accepted by the following tester subroutines:

- |                       |                                   |
|-----------------------|-----------------------------------|
| (Cpd) 1. Subject.     | (Cpd) 7. Indirect object.         |
| 2. Master.            | (Cpd) 8. Agent.                   |
| 3. Numeral master.    | (Cpd) 9. Noun complement.         |
| (Cpd) 4. Modifier.    | (Cpd) 10. Preposition complement. |
| (Cpd) 5. Object.      | 11. Comparative complement.       |
| (Cpd) 6. Left object. | 12. Arbitrary choice.             |

Action Taken

Call to:

1. Noun if "N" in CP2 of FW5.
  2. Adjective if "A" in CP2 of FW5.
-

## ADJECTIVE PREDICTOR SUBROUTINE

Assembly Address: ADJAAA

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5, also CP8, CP9, and CP10 of FW5 < 1.
2. "PA" in CP1-2 of FW5.

Accepted by the following tester subroutines:

- |                           |                                  |
|---------------------------|----------------------------------|
| (Cpd) 1. Subject.         | (Cpd) 7. Agent.                  |
| 2. Master.                | (Cpd) 8. Noun complement.        |
| (Cpd) 3. Modifier.        | (Cpd) 9. Preposition complement. |
| (Cpd) 4. Object.          | 10. Comparative complement.      |
| (Cpd) 5. Left object.     | 11. Arbitrary choice.            |
| (Cpd) 6. Indirect object. |                                  |

Called in by the following predictor subroutines:

1. Pronoun (adjectival).

Action Taken

- |                                 |              |
|---------------------------------|--------------|
| Predicts: 1. Objects, agent and | 2. End wipe. |
| verb master with                | 3. Master.   |
| 03 PSI as directed              | 4. End wipe. |
| by FW8.                         |              |

Call to (if not master):

1. Adjective-noun subject (identical with pronoun subject).
  2. Modifier.
  3. Object.
  4. Left object.
  5. Indirect object.
  6. Agent.
  7. Noun complement.
  8. Preposition complement.
- 
-

PARTICIPLE PREDICTOR SUBROUTINE

Assembly Address: PARTAA

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5 and  $> 0$  in CP10, but not  $> 0$  in CP8 and CP9 of FW5.

Accepted by the following tester subroutines:

- |                           |                                  |
|---------------------------|----------------------------------|
| (Cpd) 1. Subject.         | (Cpd) 7. Agent.                  |
| 2. Master.                | (Cpd) 8. Noun complement.        |
| (Cpd) 3. Modifier.        | (Cpd) 9. Preposition complement. |
| (Cpd) 4. Object.          | 10. Negative.                    |
| (Cpd) 5. Left object.     | 11. Arbitrary choice.            |
| (Cpd) 6. Indirect object. |                                  |

Action Taken

- Predicts:
1. Objects (unless instrumental) as directed by FW8. If "N" in CP10 of FW8 and accusative object predicted, predict instead combined genitive-accusative object.
  2. End wipe.
  3. Verb master. If "N" in CP10 of FW8, put "N" in CP1 of GW1.
  4. Object (instrumental) and agent as directed by FW8.
  5. End wipe.
  6. Master (PSI = 03) unless fulfilled verb complement.
  7. End wipe.

Call to:

- |   |                            |
|---|----------------------------|
| 1. Adjective-noun subject (identical with Pronoun subject). |                            |
| 2. Modifier.  |                            |
| 3. Object.  |                            |
| 4. Left object.   | 7. Noun complement.        |
| 5. Indirect object.   | 8. Preposition complement. |
| 6. Agent.   | 9. Verb complement.        |

Notes

Participle not accepted by verb complement (Cpd) at this time although it can "call to" verb complement.

Should be accepted by comparative complement.

---

## VERB PREDICTOR SUBROUTINE

Assembly Address: VERBAA

Reference Information

Characterized by (syntactic role mark):

1. "V" in CP1 of FW5.

Accepted by the following tester subroutines:

- |       |                               |                      |
|-------|-------------------------------|----------------------|
| (Cpd) | 1. Subject.                   | 5. Negative.         |
| (Cpd) | 2. Predicate head.            | 6. Gerund.           |
| (Cpd) | 3. Infinitive predicate head. | 7. Arbitrary choice. |
| (Cpd) | 4. Verb master.               |                      |

Action Taken

- Predicts:
1. Preposition object (with government coding).
  2. Object as directed by CP5-8 of FW5 (unless instrumental).  
If preferred argument is predicate head and left object has been found, do not predict object of case of left object. If "N" in CP10 of FW8 and accusative object predicted, predict instead combined genitive-accusative object.
  3. End wipe.
  4. Verb master (if "N" in CP10 of FW8, put "N" in CP1 of GW1).
  5. Object (instrumental) and agent as directed by CP5-8 of FW5, unless preferred argument is predicate head and instrumental left object has been found.

Other Action:

1. If "3" in CP12 of FW5, go to BYT' (быть) without making any predictions.

Call to:

- |                               |                 |
|-------------------------------|-----------------|
| 1. Verb subject.              | 4. Verb master. |
| 2. Verb predicate head.       | 5. Gerund.      |
| 3. Infinitive predicate head. |                 |
- 
-



ADVERB PREDICTOR SUBROUTINE

Assembly Address: ADVAAA

Reference Information

Characterized by (syntactic role mark):

1. "H" in CP1 of FW5 and not NE (he).
2. "A" in CP1 of FW5 and 2 or 3 in CP9 of FW5 and not > 0 in CP10 of FW5.
3. "A" in CP1 of FW5 and 1 in CP8 of FW5.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

- Predicts:
1. Comparative complement, if CP8 of FW5 > 0.
  2. Objects, agent and verb master as directed by FW8.
  3. End wipe.

Other Action:

1. If neither predictions are made under 1 and 2, go to continue to avoid wiping the prediction pool.
-

## NEGATIVE PREDICTOR SUBROUTINE

Assembly Address: NEGAAA

Reference Information

Characterized by (syntactic role mark):

1. NE (he) as text word.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Predicts: 1. Negative.

## NEGATED ADVERB PREDICTOR SUBROUTINE

Assembly Address: NEGADV

Reference Information

Characterized by (syntactic role mark):

1. "H" in CP1 of FW5.
2. "A" in CP1 of FW5 and 2 or 3 in CP9 of FW5 and not > 0 in CP10 of FW5.
3. "A" in CP1 of FW5 and 1 in CP8 of FW5.

Accepted by the following tester subroutines:

1. Negative.

Action Taken

Predicts: 1. Comparative complement if CP8 of FW5 &gt; 0.

NUMERAL PREDICTOR SUBROUTINE

Assembly Address: NUMAAA

Reference Information

Characterized by (syntactic role mark):

1. "D" in CP1 of FW5.

Accepted by the following tester subroutines:

- |                           |                                  |
|---------------------------|----------------------------------|
| (Cpd) 1. Subject.         | (Cpd) 8. Noun complement.        |
| 2. Master.                | (Cpd) 9. Preposition complement. |
| (Cpd) 3. Modifier.        | 10. Chain numeral.               |
| (Cpd) 4. Object.          | 11. Comparative complement.      |
| (Cpd) 5. Left object.     | 12. Infinity (if nominative).    |
| (Cpd) 6. Indirect object. | 13. Arbitrary choice.            |
| (Cpd) 7. Agent.           |                                  |

Action Taken

- Predicts:
1. M.E. Chain numeral.
  2. M.E. Numeral master according to following conditions (if "A" in CP2 of FW5):
    - (a) if "RZV" or if no intersection between FW6 and FW8, put FW8 in GW1.
    - (b) if intersection, put intersection in GW1; if genitive, predict both singular and plural.
  3. End wipe.

Call to:

1. If "A" in CP2 of FW5 and not numeral master.
    - (a) Adjective-noun subject (identical to pronoun subject).
    - (b) Modifier.
    - (c) Object.
    - (d) Left object.
    - (e) Indirect object.
    - (f) Agent.
    - (g) Noun complement.
    - (h) Preposition complement.
  2. If "N" in CP2 of FW5, go to noun.
- 
-

## NUMERAL MASTER PREDICTOR SUBROUTINE

Assembly Address: NUMAST

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5 and CP9 of FW5 < 1.
2. "PA" in CP1-2 of FW5.

Accepted by the following tester subroutines:

1. Numeral master.

Action Taken

Predicts: 1. Numeral master.

- (a) If "R" in CP2 of GW1, predict "R" in CP2 of GW1 and "Z" in positions corresponding to intersections.
- (b) If not "R" in CP2 of GW1, predict normal intersections.

## PREPOSITION PREDICTOR SUBROUTINE

Assembly Address: PREP△△

Reference Information

Characterized by (syntactic role mark):

1. "R" in CP1 of FW5.

Accepted by the following tester subroutines:

1. Compound preposition.
2. Infinity.

Called in by the following predictor subroutines:

1. Preposition object.

Action Taken

- Predicts: 1. Preposition complement. 3. End wipe.  
2. Compound preposition.

GERUND PREDICTOR SUBROUTINE

Assembly Address: GERNAΔ

Reference Information

Characterized by (syntactic role mark):

1. "V" in CP1 of FW5 and "G" in CP9 of FW6.

Called in by the following predictor subroutines:

1. Verb.
2. BYT' (быт)

Action Taken

Predicts: 1. Compound gerund. 2. End wipe.

---

INFINITE CONJUNCTION PREDICTOR SUBROUTINE

Assembly Address: CONJXΔ

Reference Information

Characterized by (syntactic role mark):

1. I (и), ИЛИ (или), A (а), or NO (но).
2. ", " in CP1 of FW5 and "INF CONJ" in FW9.

Accepted by the following tester subroutines:

1. Infinity.

Called in by the following predictor subroutines:

1. CHEM (чем).

Action Taken

Predicts: 1. 99-Activator.

Notes

Comma should not fulfill INF CONJ.

Put mark in FW5 for all INF CONJ.

---

## RELATIVE CONJUNCTION PREDICTOR SUBROUTINE

Assembly Address: RCNJTA

Reference Information

Characterized by (syntactic role mark):

1. "C" in CPl of FW5.

If I (и), ИЛИ (или), А (а), or NO (но), check prediction pool for unfulfilled subject, left object, and predicate head predictions. Accept only if none found.

Accepted by the following tester subroutines:

1. Relative conjunction.

Action Taken

Predicts: 1. If ЕСЛИ (если) or ЧТОБЫ (чтобы) as text word, infinitive predicate head.

Other Action:

1. Activate all inactive predictions ( $50 \leq \text{PSI} \leq 98$ ). Update serial number upon activating. Also update serial number of top comma end wipe in pool.

Notes

Should also check for objects of predicate head that must be fulfilled. Cannot do this now.

---

CHEM ( uem) PREDICTOR SUBROUTINE

Assembly Address: CHEM^^

Reference Information

Characterized by (syntactic role mark):

1. CHEM ( uem) as text word and "C" in CP1 of FW5

Accepted by the following tester subroutines:

1. Comparative complement.

Action Taken

Predicts: 1. Object, if comparative complement predicted by adjective predicate head.

Call to:

1. Infinite conjunction, if comparative complement predicted by adverb.

---

MODIFIER PREDICTOR SUBROUTINE

Assembly Address: MOD^^^

Reference Information

Characterized by (syntactic role mark):

1. iiimODIFIERi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

Predicts: 1. Compound modifier (in same case and number).  
2. End wipe.  
3. Comma end wipe in continue clause mode.

---

## OBJECT PREDICTOR SUBROUTINE

Assembly Address: OBJAAA

Reference Information

Characterized by (syntactic role mark):

1. iiiiiOBJECTi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

- Predicts:
1. Compound object with same case(s) as object.
  2. End wipe.

Notes

This predictor routine also takes care of the following other predictor routines:

- (a) Left object.
  - (b) Indirect object.
  - (c) Agent.
  - (d) Noun complement.
  - (e) Preposition complement.
- 
-



LEFT OBJECT PREDICTOR SUBROUTINE

Assembly Address: LOBJTA

Reference Information

Characterized by (syntactic role mark):

1. iiiiiLΔOBJΔi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

Predicts: 1. Compound left object with same case(s) as  
left object.

2. End wipe.

Other Action:

1. Put case in CP2 of GW2 of predicate  
head prediction.

Notes

Same as object predictor.

---

## INDIRECT OBJECT PREDICTOR SUBROUTINE

Assembly Address: INDOBJ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiINDΔOBJi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

Predicts: 1. Compound indirect object. 2. End wipe.

NotesSame as object predictor.

## AGENT PREDICTOR SUBROUTINE

Assembly Address: AGTΔΔΔ

Reference Information

Characterized by (syntactic role mark):

1. iiiiiAGENTΔi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

Predicts: 1. Compound agent. 2. End wipe.

NotesSame as object predictor.

NOUN COMPLEMENT PREDICTOR SUBROUTINE

Assembly Address: NCOMPT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiNΔCOMPi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

- Predicts: 1. Compound noun complement.  
2. End wipe.

Notes

Same as object predictor.

---

PREPOSITION COMPLEMENT PREDICTOR SUBROUTINE

Assembly Address: RCOMPT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiRΔCOMPi in FW9.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Participle. |
| 2. Adjective. | 4. Numeral.    |

Action Taken

- Predicts: 1. Compound preposition complement in same case as  
preposition complement.  
2. End wipe.

Notes

Same as object predictor.

---

## ADJECTIVE-NOUN SUBJECT PREDICTOR SUBROUTINE

Assembly Address: ANSUBA

Reference Information

Characterized by (syntactic role mark):

1. iiiiiSUBJECT1 in FW9 and neither "V" in CPL of FW5 nor "PN" in CPL-2 of FW5.

Called in by the following predictor subroutines:

- |               |                |
|---------------|----------------|
| 1. Noun.      | 3. Numeral.    |
| 2. Adjective. | 4. Participle. |

Action Taken

- Predicts:
1. Compound subject with any person, number and gender.
  2. End wipe.

Other Action:

1. Modify predicate head prediction (if it has not been fulfilled) to 3rd person, and to number and gender of preferred argument. Put > 0 in CP3 of GW2.
  2. If compound subject, modify predicate head prediction to 3rd person plural any gender.
-

PRONOUN SUBJECT PREDICTOR SUBROUTINE

Assembly Address: PSUBAA

Reference Information

Characterized by (syntactic role mark):

1. iiiiiSUBJCTi in FW9 and "PN" in CP1-2 of FW5.

Called in by the following predictor subroutines:

1. Noun.

Action Taken

- Predicts:
1. Compound subject with any person, number and gender.
  2. End wipe.

Other Action:

1. Modify predicate head (if it has not been fulfilled) as to person, number and gender of pronoun and put > 0 in CP3 of GW2.
2. If compound subject, modify to 3rd person plural, any gender.

Notes

This has been merged with adjective-noun subject.

---

## VERB SUBJECT PREDICTOR SUBROUTINE

Assembly Address: VSUBAA

Reference Information

Characterized by (syntactic role mark):

1. iiiiiSUBJECTi in FW9 and "V" in CP1 of FW5.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (быть)

Action Taken

- Predicts:
1. Compound subject (verb infinitive only:  
CP2 of GW2 = 1).
  2. End wipe.

Other Action:

1. Modifies predicate head (if it has not been fulfilled) to  
3rd person, neuter, singular, and puts > 0 in CP3 of GW2.
- 

## VERB PREDICATE HEAD PREDICTOR SUBROUTINE

Assembly Address: VPREDH

Reference Information

Characterized by (syntactic role mark):

1. iiiiiVAPREDA in FW9.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (быть)

Action Taken

- Predicts:
1. Compound predicate head with same person, number and gender.

Other Action:

1. If predicate head is 1st person, modify PSI of subject to 03.
  2. Modifies subject (if it has not been fulfilled) as to  
person, number and gender, and puts > 0 into CP3 of GW2.
  3. Erases left object predictions if they have not been fulfilled.
-

ADJECTIVE PREDICATE HEAD PREDICTOR SUBROUTINE

Assembly Address: APREDH

Reference Information

Characterized by (syntactic role mark):

1. "A" in CP1 of FW5 and 1 or 2 in CP9 of FW5.
2. "X" in CP1 of FW5.

Accepted by the following tester subroutines:

1. Predicate head.
- (Cpd) 2. Verb complement.

Action Taken

- Predicts:
1. Comparative complement, if CP8 of FW5  $> 0$ .
  2. Objects, agent and verb master with 03 PSI as directed by FW8, if CP8 of FW5  $\leq 0$  and left object not fulfilled.
  3. Verb master.\*
  4. Compound predicate head with same person, number, and gender.

Other Action:

1. Wipe left object predictions if not yet fulfilled.
2. If CP1 of FW5 is "X", wipe subject prediction with same serial number as in CP1-3 of FW9.
3. If CP1 of FW5 is "A", modify subject prediction to any person and to number and gender of preferred argument and put  $> 0$  into CP3 of GW2.

Notes

- \*If predict verb master due to "P9" code in number 2 above, must inhibit prediction of 3 above.
- 
-

## BYT' (6yTb) PREDICTOR SUBROUTINE

Assembly Address: BYTAAA

Reference Information

Characterized by (syntactic role mark):

1. "V" in CP1 of FW5 and "3" in CP12 of FW5.

Called in by the following predictor subroutines:

1. Verb

Action Taken

- Predicts:
1. M.E. Verb master (if "N" in CP10 of FW8, put "N" in CP1 of GW1).
  2. M.E. Object (nominative-instrumental combined) (if left object found, don't predict object).
  3. M.E. Verb complement (predict any number and gender if have gerund or infinitive).

Call to:

1. Verb subject.
  2. Verb predicate head.
  3. Infinitive predicate head.
  4. Verb master.
  5. Gerund.
-



INFINITIVE PREDICATE HEAD PREDICTOR SUBROUTINE

Assembly Address: IPREDT

Reference Information

Characterized by (syntactic role mark):

1. iiiiIAPREDΔΔ in FW9.

Called in by the following predictor subroutines:

1. Verb
2. BYT' (быть)

Action Taken

- Predicts:
1. Compound infinitive predicate head.
  2. End wipe.
- 

VERB COMPLEMENT PREDICTOR SUBROUTINE

Assembly Address: VCOMPT

Reference Information

Characterized by (syntactic role mark):

1. iiiiIVΔCOMPA in FW9.

Called in by the following predictor subroutines:

1. Participle

Action Taken

- Predicts:
1. Compound verb complement (with same number and gender).
  2. End wipe.
-

## VERB MASTER PREDICTOR SUBROUTINE

Assembly Address: VMASTT

Reference Information

Characterized by (syntactic role mark):

1. iiiiiVMASTA in FW9.

Called in by the following predictor subroutines:

1. Verb
2. BYT' ( 6ytr)

Action Taken

Predicts: 1. Compound verb master.

---

---

PREPOSITION OBJECT PREDICTOR SUBROUTINE

Assembly Address: ROBJTA

Reference Information

Characterized by (syntactic role mark):

1. "R" in CPl of FW5, the identical preposition, and agreement with government code.

Accepted by the following tester subroutines:

1. Preposition object.

Action Taken

Call to:

1. Preposition.

NotesSame as preposition routine.

---

---

\$---\$ PREDICTOR SUBROUTINE

Assembly Address: DOLLAR

Reference Information

Characterized by (syntactic role mark):

1. "\$" in CP1 of FW2.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Other Action:

1. Go to continue to avoid wiping the prediction pool.
- 

LEFT PAREN PREDICTOR SUBROUTINE

Assembly Address: LPAREN

Reference Information

Characterized by (syntactic role mark):

1. "(" as input text word.

Accepted by the following tester subroutines:

1. Infinity.

Action Taken

Predicts: 1. Right paren end wipe.

---

## END-OF-SENTENCE PREDICTOR SUBROUTINE

Assembly Address: ECSTAA

Reference Information

Characterized by (syntactic role mark):

1. "." in CPl of FW5.
2. ";" in CPl of FW5.
3. ":" in CPl of FW5.

Accepted by the following tester subroutines:

1. End of sentence.

Action Taken

Other Action:

1. Wipe prediction pool completely.
2. Set chain number to 00.
3. Put 3 space blockettes in hindsight and final choice tapes.

Call to:

1. Initial.
-

SUBJECT TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, SUBJAA

Compound PSI = 99

ABS, 000992, 00, CSUBJE

Reference Information

Predicted by:

1. Initial (active and inactive).
2. Comma (inactive).
3. Clauser.

Modified by:

1. Verb predicate head.
2. Adjective predicate head.

Reference Information

Predicted by:

1. Adjective-noun subject.
2. Pronoun subject.
3. Verb subject.

Testing Criteria

Fulfilled by:

- |   |   |
|---|---|
| <ol style="list-style-type: none"><li>1. Noun.</li><li>2. Adjective.</li><li>3. Participle.</li><li>4. Numeral.</li></ol> | } if prediction<br>is in 3rd<br>person. |
|---|---|

5. Pronoun, if prediction matches in person.
6. Verb (infinitive), if prediction is 3rd person, singular, neuter.

Grammatical Information required:

1. GW1: Nominative and number.
2. GW2: CP1: Gender. CP2: Subject must be verb if > 0.  
CP3: Predicate head fulfilled if > 0. CP4: Person.

Syntactic Role Mark

△△SUBJCT△

Syntactic Role Mark

△CSUBJCT△

---

## PREDICATE HEAD TESTER SUBROUTINE

PSI = 01

Compound PSI = 99

ABS, 000912, 00, PREDAA

ABS, 000992, 00, CPREDA

Reference Information

Predicted by:

1. Initial (both active and inactive).
2. Comma (inactive).
3. Clauser.

Modified by:

1. Adjective-noun subject.
2. Pronoun subject.
3. Verb subject.
4. Left object.

Reference Information

Predicted by:

1. Verb predicate head.
2. Adjective predicate head.

Testing Criteria

Fulfilled by:

1. Verb (indicative).
2. Adjective predicate head (if CP2 of GW2 < 1).

Grammatical information required:

1. GW1: Nominative and number.
2. GW2: CP1: Gender. CP2: Left object found if > 0 and case given by CP2. CP3: Subject fulfilled if > 0. CP4: Person.

Syntactic Role Mark

AAVAPREDA

AAAAPREDA

Syntactic Role Mark

ACVAPREDA

ACAAPREDA

INFINITIVE PREDICATE HEAD TESTER SUBROUTINE

PSI = 00

Compound PSI = 99

ABS, 000000, 00, IPREDΔ

ABS, 000990, 00, CIPRED

Reference Information

Predicted by:

1. Relative conjunction.  
(ESLI (если) and  
CHTOBY (чтобы) only).

Reference Information

Predicted by:

1. Infinitive predicate  
head.

Testing Criteria

Fulfilled by:

1. Verb (infinitive).

Immediate Action

Wipe all predictions down to, but not including, top comma end wipe.

Syntactic Role Mark

ΔIΔPREDΔΔ

Syntactic Role Mark

CIΔPREDΔΔ

## MASTER TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, MASTAA

Reference Information

Predicted by:

1. Adjective.
2. Participle.

Testing Criteria

Fulfilled by:

1. Adjective.
2. Noun.
3. Pronoun.
4. Numeral.
5. Participle.

Grammatical information required:

1. GW1: Case and number.
2. GW2: Gender.
3. GW3: Mark of word making prediction.

Syntactic Role Mark

xxxxxxxxM

(x-x = mark of word predicting master)

Notes

Master preferred argument should override object or agent preferred argument from word with same text serial number. (This test made in override.)

---



NUMERAL MASTER TESTER SUBROUTINE

PSI = 01

ABS, 000012, 00, NMASTA

Reference Information

Predicted by:

1. Numeral.
2. Numeral master.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun (nominal).
3. Numeral master.

Grammatical information required:

1. GW1: "RZV" or case and number.
2. GW2: Mark of word making prediction.

Syntactic Role Mark

xxxxxxxxN

(x-x = mark of word predicting numeral master)

Notes

If "R" in CP2 of GW1, both 1 and 2 must be genitive singular and 3 fulfills non-R case and number. Otherwise, look for normal intersection.

---

## VERB MASTER TESTER SUBROUTINE

PSI = 03

Compound PSI = 99

ABS, 000031, 00, VMASTA

ABS, 000991, 00, CVMAST

Reference Information

Predicted by:

1. Noun.
2. Adjective.
3. Participle.
4. Verb
5. Adverb
6. Adjective predicate head.
7. BYT' (бѣтѣ).

Reference Information

Predicted by:

1. Verb master.

Testing Criteria

Fulfilled by:

1. Verb (infinitive).

Grammatical information required:

1. GW1: CPl: "N" if negated.

Immediate Action

If "N" in CPl of GW1, put "N" in CPl0 of FW8.

Syntactic Role Mark

△△V△MASTA△

Syntactic Role Mark

△CV△MASTA△

VERB COMPLEMENT TESTER SUBROUTINE

PSI = 03

ABS, 000031, 00, VCOMPΔ

Compound PSI = 99

ABS, 000991, 00, CVCOMP

Reference Information

Predicted by:

1. BYT: (быть).

Reference Information

Predicted by:

1. Verb complement.

Testing Criteria

Fulfilled by:

1. Adjective with 1 or 2  
in CP9 of FW5.

Grammatical information required:

1. GW1: CP1: Gender, CP2: Number.

Syntactic Role Mark

ΔΔVΔCOMPΔ

Syntactic Role Mark

ΔCVΔCOMPΔ

Notes

Presently go to participle predictor. Should go directly  
to verb complement predictor.

---

## MODIFIER TESTER SUBROUTINE

PSI = 50

Compound PSI = 99

ABS, 000501, CO, MODIFA

ABS, 000992, 00, CMODIF

Reference Information

Predicted by:

1. Noun.

Modified by:

1. Activated by comma end-wipe activator.

Reference Information

Predicted by:

1. Modifier.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and number.

Syntactic Role Mark

ΔMODIFERA

Syntactic Role Mark

CMODIFERA

OBJECT TESTER SUBROUTINE

PSI = 01

Compound PSI = 99

ABS, 000012, 00, OBJECT

ABS, 000992, 00, COBJCT

Reference Information

Predicted by:

1. Noun.
2. Adjective.
3. Participle.
4. Verb.
5. Adverb.
6. CHEM (чeм).
7. Adjective predicate head.
8. BYT' (быть).

Reference Information

Predicted by:

1. Object.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and Number.
2. GW2: "△△△△OBJECT△"

Syntactic Role Mark

△△OBJECT△

Syntactic Role Mark

△COBJECT△

Notes

This tester routine also takes care of the following testers:

- |                      |                             |
|----------------------|-----------------------------|
| (a) Left object.     | (d) Noun complement.        |
| (b) Indirect object. | (e) Preposition complement. |
| (c) Agent.           |                             |
-

## LEFT OBJECT TESTER SUBROUTINE

PSI = 03

Compound PSI = 99

ABS, 000032, 00, LOBJEA

ABS, 000992, 00, CLOBJE

Reference Information

Predicted by:

1. Initial (active and inactive).
2. Comma (inactive).
3. Clauser

Modified by:

1. Wiped by verb predicate head.
2. Wiped by adjective predicate head.

Reference Information

Predicted by:

1. Left object.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical Information required:

1. GW1: "00A000 00A000" or "0000IO 0000IO"
2. GW2: "AAAAAL AOBJA"

Syntactic Role Mark

ALA OBJA

Syntactic Role Mark

ALC OBJA

NotesSame as object tester.

INDIRECT OBJECT TESTER SUBROUTINE

PSI = 03

ABS, 000032, 00, INDOBA

Compound PSI = 99

ABS, 000992, 00, CINDOB

Reference Information

Predicted by:

1. Initial (active and inactive).
2. Comma (inactive).
3. Clauser.

Reference Information

Predicted by:

1. Indirect object.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: "000C00 000C00"
2. GW2: "ΔΔΔΔIN DΔOBJΔ"

Syntactic Role Mark

ΔINDΔOBJΔ

Syntactic Role Mark

CINDΔOBJΔ

Notes

Same as object tester.

---

## AGENT TESTER SUBROUTINE

PSI = 03

Compound PSI = 99

ABS, 000032, 00, AGENTA

ABS, 000992, 00, CAGENT

Reference Information

Predicted by:

1. Noun.
2. Adjective.
3. Participle.
4. Verb.
5. Adverb.

Reference Information

Predicted by:

1. Agent.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and number.
2. GW2: "^^^^^AGENTA^^"

Syntactic Role Mark

^^AGENTA^^

Syntactic Role Mark

^CAGENTA^

NotesSame as object tester.



NOUN COMPLEMENT TESTER SUBROUTINE

PSI = 00

Compound PSI = 99

ABS, 000002, 00, NCCMPA

ABS, 000992, 00, CNCOMP

Reference Information

Predicted by:

1. Noun.

Reference Information

Predicted by:

1. Noun complement.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: "OG0000 OG0000"
2. GW2: "ΔΔΔΔΔN ΔCOMPA"

Syntactic Role Mark

ΔΔNΔCOMPA

Syntactic Role Mark

ΔCNΔCOMPA

Notes

Same as object tester.

---

## PREPOSITION COMPLEMENT TESTER SUBROUTINE

PSI = 01

Compound PSI = 99

ABS, 000012, 00, RCOMPΔ

ABS, 000992, 00, CRCOMP

Reference Information

Predicted by:

1. Preposition.

Reference Information

Predicted by:

1. Preposition complement.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle.
5. Numeral.

Grammatical information required:

1. GW1: Case and number.
2. GW2: "ΔΔΔΔΔRΔCOMPΔ".

Syntactic Role Mark

ΔΔRΔCOMPΔ

Syntactic Role Mark

ΔCRΔCOMPΔ

NotesSame as object tester.

CHAIN NUMERAL TESTER SUBROUTINE

PSI = 00

ABS, 000003, 00, CHNNUM

Reference Information

Predicted by:

1. Numeral.

Testing Criteria

Fulfilled by:

1. Numeral.

Grammatical information required:

1. GW1: Case and number.
2. GW2: Gender.
3. GW3: Mark of word making prediction.

Syntactic Role Mark

xxxxxxxxN

(x-x = mark of word predicting chain numeral)

---

## NEGATIVE TESTER SUBROUTINE

PSI = 00

ABS, 000000, 00, NEGTV

Reference Information

Predicted by:

1. Negative.

Testing Criteria

Fulfilled by:

1. Verb.
2. Participle.
3. Negated adverb.

Immediate Action

1. If fulfilled by 1 or 2:
  - (a) Put "N" in CP10 of FW8.
  - (b) Do not call to success.
  - (c) Don't make mark.

Syntactic Role Mark

INFΔADVBAΔΔΔΔ

---

COMPARATIVE COMPLEMENT TESTER SUBROUTINE

PSI = 01

ABS, 000011, 00, CMPCMP

Reference Information

Predicted by:

1. Adverb.
2. Negated adverb.
3. Adjective predicate head.

Testing Criteria

Fulfilled by:

- |                          |                     |
|--------------------------|---------------------|
| 1. Noun.                 | } must be genitive. |
| 2. Pronoun (adjectival). |                     |
| 3. Adjective.            |                     |
| 4. Numeral.              |                     |
| 5. CHEM (chem).          |                     |
| 6. Comma.                |                     |

Grammatical information required:

1. GW1: "A00000 000000" if predicted by adverb or  
negated adverb.  
"P00000 000000" if predicted by adjective predicate head.

Syntactic Role Mark

ΔCMPΔCMPΔ

Notes

Must eliminate comma fulfillment.

---

## PREPOSITION OBJECT TESTER SUBROUTINE

PSI = 00

ABS, 000001, CC, ROBJEA

Reference Information

Predicted by:

1. Verb.

Testing Criteria

Fulfilled by:

1. Preposition object.

Grammatical information required:

1. GW1: Preposition government code in CPL-2  
(e.g., E1, H6, etc.).

Syntactic Role Mark

ΔRΔOBJΔΔΔ

Notes

1. Compounding not taken into account.
  2. A table of prepositions and codes is stored in the program,  
one machine word per preposition and code: CCPPPPPPPPN.  
CC-Government code. N-case of governed preposition.  
PPPPPPPP-X-lit of preposition with delta fill.
- 
-

COMPOUND PREPOSITION TESTER SUBROUTINE

Compound PSI = 99

ABS, 000991, 00, CPREPA

Reference Information

Predicted by:

1. Preposition.

Testing Criteria

Fulfilled by:

1. Preposition (that is identical).

Grammatical information required:

1. GW1: Preposition (x-lit).

Syntactic Role Mark

CAPREFAAA

---

## GERUND TESTER SUBROUTINE

PSI = 03

ABS, 000030, 00, GERUND

Compound PSI = 99

ABS, 000990, 00, CGERUNΔ

Reference Information

Predicted by:

1. Initial.
2. Comma.

Reference Information

Predicted by:

1. Gerund.

Testing Criteria

Fulfilled by:

1. Verb (gerund).

Syntactic Role Mark

ΔGERUNDΔΔ

Syntactic Role Mark

CGERUNDΔΔ

---



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RELATIVE CONJUNCTION TESTER SUBROUTINE

PSI = 03

ABS, 000030, 00, RCONJA

Reference Information

Predicted by:

1. Initial.
2. Comma

Testing Criteria

Fulfilled by:

1. Relative conjunction.

Syntactic Role Mark

KARACONJA

---

## RELATIVE PRONOUN TESTER SUBROUTINE

PSI = 03

ABS, 000030, 00, RPRONA

Reference Information

Predicted by:

1. Initial.
2. Comma.

Testing Criteria

Fulfilled by:

1. Relative pronoun.\*

Immediate Action

Whether or not there has been a previous success, upon fulfillment, the routine activates all predictions in the pool with  $50 \leq \text{PSI} \leq 98$ , changing serial number. This tester never calls to the success control routine, and continues as if there had been no success. Change serial of top comma end wipe in pool to serial in T4. Set "K" extractor subroutine.

Notes

\*A relative pronoun is characterized by:

- (a) "P" in CP1 of OW and
  - (b) "R" in CP8 of OW.
-

INFINITY TESTER SUBROUTINE

Assembly Address: INFINT

Reference Information

Called in by:

1. End of sentence.
2. End wipe.
3. Comma end wipe.
4. Right paren end wipe.
5. Comma end-wipe activator.
6. 99-activator.

Testing Criteria

Fulfilled by:

- |              |                             |
|--------------|-----------------------------|
| 1. Comma.    | 5. Numeral (nominative with |
| 2. Clauser.  | "C" in CPL2 of FW5).        |
| 3. Adverb.   | 6. Preposition.             |
| 4. Negative. | 7. Infinite conjunction.    |
|              | 8. Dollar sign.             |
|              | 9. Left paren.              |

Syntactic Role Mark (respectively)

1. INF^COMMA^
  2. INF^CLAUSER^
  3. INF^ADVB^
  4. INF^NEGATIVE
  5. INF^NUMERAL^
  6. INF^PREP^
  7. INF^CONJUNCT^
  8. INF^\$\$\$^
  9. INF^L^PAREN^
- 
-

## ARBITRARY CHOICE TESTER SUBROUTINE

Assembly Address: ARBTRA

Reference Information

Called in by:

1. End-of-sentence end wipe.

Testing Criteria

Fulfilled by:

1. Noun.
2. Pronoun.
3. Adjective.
4. Participle
5. Verb.
6. Numeral.
7. and others not accepted by infinity or other predictions.

Syntactic Role Mark

△△ARBTRA△△

Notes

1. This tester can be fulfilled only if there are no previous "success".
  2. If fulfilled, increase chain number by 1.
  3. Go to prediction generating control whether or not fulfilled.
- 
-

END-OF-SENTENCE TESTER SUBROUTINE

PSI = 01

ABS, 000010, 00, EOSEAA

Reference Information

Predicted by:

1. Initial.

Called in by:

1. Right paren end wipe.
2. Comma end wipe (continue clause mode).

Testing Criteria

Fulfilled by:

1. End of sentence.

Immediate Action

When testing is finished, go to infinity and then transfer  
to end of sentence end wipe.

Syntactic Role Mark

ENDΔOFΔSENT.

---

## END-WIPE SENTINEL SUBROUTINE

ABS, 000020 00, ENDWPE

Reference Information

## Predicted by:

- |                    |                                |
|--------------------|--------------------------------|
| 1. Initial (2).    | 11. Object.                    |
| 2. Comma (2).      | 12. Left object.               |
| 3. Adjective (2).  | 13. Indirect object.           |
| 4. Participle (3). | 14. Agent.                     |
| 5. Verb.           | 15. Noun complement.           |
| 6. Adverb.         | 16. Preposition complement.    |
| 7. Numeral.        | 17. Adjective-noun subject.    |
| 8. Preposition.    | 18. Verb subject.              |
| 9. Gerund.         | 19. Infinitive predicate head. |
| 10. Modifier.      | 20. Verb complement.           |

## Called in by:

1. Comma end wipe (either if in end clause mode or if have "\*").

Immediate Action

1. Perform infinity tester.
  2. If no success, wipe everything preceding in the pool including itself, and then continue with testing. Write all wiped 01 PSI predictions on hindsight tape with grammatical information.
-

COMMA END-WIPE SENTINEL SUBROUTINE

ABS, 000021 00, CEWAAA

Reference Information

Predicted by:

1. Initial (in end clause mode).
2. Clauser (in continue clause mode).
3. Comma (in end clause mode).
4. Modifier (in continue clause mode).

Modified by:

1. End-of-sentence end wipe.
2. Comma end-wipe activator.
3. Program executive routine.

Testing Criteria

Grammatical information required:

1. GW1: "ENDΔCLAUSEΔΔ" or "CONT.CLAUSE"

Immediate Action

1. Perform infinity tester.
  2. If in end clause mode or this item is a "\*" ), transfer to end wipe.
  3. If in continue clause mode, transfer to end of sentence.
-

## END-OF-SENTENCE END-WIPE SENTINEL SUBROUTINE

ABS, 000020,00, ESEWAA

Reference Information

Called in by:

1. End of sentence (via infinity).

Immediate Action

1. Set all comma end-wipe sentinels to continue clause mode.
  2. (a) If came from comma end wipe and there was no success, wipe all predictions before and including comma end wipe. Go to arbitrary choice.  
(b) If came from end of sentence, wipe entire pool except end of sentence. Go to arbitrary choice.  
(c) If came from comma end wipe and there was a success, return to executive routine control.
-



RIGHT PAREN TESTER SUBROUTINE

PSI = 01

ABS, 000020, 00, RPEWAA

Reference Information

Predicted by:

1. Left paren.

Testing Criteria

Fulfilled by:

1. "\*" as text word.

Immediate Action

1. If not fulfilled, go to right paren end wipe.
2. If fulfilled, wipe this and all previous predictions.

Syntactic Role Mark

ARAPARENA

Notes

This tester together with right paren end wipe are one program routine. Present PSI of combined routine is 02.

---

## RIGHT PAREN END-WIPE SENTINEL SUBROUTINE

ABS, 000020,00, RPEW△△

Reference Information

Called in by:

1. Right paren.

Immediate Action

1. Perform infinity tester.
2. Go to end of sentence tester.

Notes

This sentinel together with right paren tester are one program routine.

---

## COMMA END-WIPE ACTIVATOR SENTINEL SUBROUTINE

ABS, 000020,00, CEWA△△

Reference Information

Predicted by:

1. Initial.
2. Comma.

Immediate Action

1. Perform infinity tester.
  2. If no success, wipe this and all previous predictions in pool.
  3. Modify comma end-wipe sentinels to end clause mode.
  4. Activate all modifier predictions in pool.
-

99-ACTIVATOR SENTINEL SUBROUTINE

ABS, 000020,00, 499EWA

Reference Information

Predicted by:

1. Infinite conjunction.

Immediate Action

1. Perform infinity tester.
  2. If no success, wipe this and all previous predictions in pool.
  3. Activate all 99 PSI predictions in pool.
-

[illegible][illegible][illegible]

A B C D  
 6 9 0 1 2 3 4 5 6 7 8 9 0 0 0  
 D = WIPED PREDICTION  
 X 16 - SUBJECT  
 X 01 - PREDICATE HEAD  
 659 - OBJECT, AGENT, PREPOSITION  
 COMPLEMENT  
 531 - MASTER  
 X 15 - NUMERAL MASTER

Output Format of the Experimental Predictive Syntactic Analysis Program

Figure 1

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER (TRANSLITERATED)	RUSSIAN WORD	TEXT		ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
			SERIAL NO.	WORD					
LIKE	A02,00	PODOBEN-YE	00H-0507	AD00000	0	-----N-A-----	P2	1475400000000	
ANTENNA	A01,00	ANTENN-YE	00H-0508	AD01000	0	-----N-A-----		0031200000000	
SYSTEM	N04,00	SISTEM-Y	00H-0509	ND12F000	0	-----N-A-----		184402857142	
SYSTEM	V01,00	OPISYVA-JUTS JA	00H-0510	VN 0P30000		-----F-F-----		1271100000000	
						-----TBADR	BOB1B4B6		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE	
LIKE	00	14	00H-0507	AD00000	0	-----N-----	P2	111 SUBJECT	
ANTENNA	00	11	00H-0508	AD01000	0	-----N-----		507 SUBJECT	
SYSTEM	00	11	00H-0509	ND12F000		-----N-----		508 SUBJECT	
SYSTEM	00	11	00H-0510	VN 0P40000		0000TBADR	BOB1B4B6	111 V PRED	
HINDSIGHT									
						INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
LIKE	A02,00	PODOBEN-YE	00H-0507	AD00000	0	-----A-----	P2	111 L ORJ	
ANTENNA	A01,00	ANTENN-YE	00H-0508	AD01000	0	-----A-----		111 L ORJ	
SYSTEM	N04,00	SISTEM-Y	00H-0509	ND12F000		-----A-----		111 L ORJ	

A Basic Phrase  
Figure 2

UNANALYZED TEXT							
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
CONNECTION	WIEL	WIEL	00K-0341	PA K STD 0	-----P-----	POOROPAOOAOO	15424555554
LOCATION	WIEL	WIEL	00K-0342	PA K STD 0	-----P-----	POOROPAOOAOO	218926874994
TIME	WIEL	WIEL	00K-0343	PA K STD 0	-----P-----	POOROPAOOAOO	1731400000000
DEPENDENT	WIEL	WIEL	00K-0344	PA K STD 0	-----P-----	POOROPAOOAOO	216922708330
			00K-0345	PA K STD 0	-----P-----	POOROPAOOAOO	1101700000000
			00K-0346	PA K STD 0	-----P-----	POOROPAOOAOO	0270400000000
			00K-0347	PA K STD 0	-----P-----	POOROPAOOAOO	1160000000000
ANALYZED TEXT							
			CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE	
CONNECTION	WIEL	WIEL	00 12	00K-0341	-----P-----	INF PREP	
LOCATION	WIEL	WIEL	00 21	00K-0342	-----P-----	181 R COMP	
TIME	WIEL	WIEL	00 22	00K-0343	-----P-----	111 SUBJECT	
DEPENDENT	WIEL	WIEL	00 10	00K-0344	-----P-----	183 N COMP	
			00 14	00K-0345	-----P-----	184 N COMP	
			00 17	00K-0346	-----P-----	185 N COMP	
			00 17	00K-0347	-----P-----	111 A PRED	
HINDSIGHT							
			CHAIN NO.	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE	
CONNECTION	WIEL	WIEL	00 12	00K-0341	-----P-----	381 R COMP	
LOCATION	WIEL	WIEL	00 21	00K-0342	-----P-----	111 L OBJ	
TIME	WIEL	WIEL	00 22	00K-0343	-----P-----	183 N COMP	
DEPENDENT	WIEL	WIEL	00 10	00K-0344	-----P-----	111 L OBJ	
			00 14	00K-0345	-----P-----	111 L OBJ	
			00 17	00K-0346	-----P-----	111 IND OBJ	
			00 17	00K-0347	-----P-----	INF ADVB	

A Basic Phrase with an Unfulfilled Master Prediction  
Figure 3

A Basic Phrase with a Nested Prepositional Phrase

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
RESISTANCE	N10.00	СОПРОТИВЛЕНТ -Е	00A-1726	ND11N100	N-A-----	P4		188310000000
THIS	P01.00	ЭТО-У	00A-1727	PKLI STD	N-A-----	P2P9		218923749996
SHOULD	A02.00	ДОЛЖЕН-О	00A-1728	AD00000 2	N-A-----	B0		054100000000
CONSIDERABLE	V21.00	ОУ-Т	00A-1729	VN 3000000 3	N-A-----			010605000000
GREATER	A02.00	БОЛЬШЕ-О	00A-1730	AD00000 2	N-A-----			072900000000
LARGE	A04.00	БОЛ.Ш-ТМ	00A-1731	AD00000 2	N-A-----			090050000000
INSTEAD	A05.00	ВМЕСТО-ТМ	00A-1732	AD01000 0	N-A-----			009100000000
RESISTANCE	N10.00	СОПРОТИВЛЕНТ -Е	00A-1733	ND11N100	N-A-----	P4		019250000000
PUTTING IN	A04.00	ПОДКЛЮЧ-И	00A-1734	AD01000 40	N-A-----	O000		188310000000
PIPE	N05.00	ЛАМПА	00A-1735	ND12F000	N-A-----			147000000000
..			00A-1736		N-A-----			098600000000

# ANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
RESISTANCE	N10.00	СОПРОТИВЛЕНТ -Е	00A-1726	ND11N100	N-A-----	P4		188310000000
THIS	P01.00	ЭТО-У	00A-1727	PKLI STD	N-A-----	P2P9		218923749996
SHOULD	A02.00	ДОЛЖЕН-О	00A-1728	AD00000 2	N-A-----	B0		054100000000
CONSIDERABLE	V21.00	ОУ-Т	00A-1729	VN 3000000 3	N-A-----			010605000000
GREATER	A02.00	БОЛЬШЕ-О	00A-1730	AD00000 2	N-A-----			072900000000
LARGE	A04.00	БОЛ.Ш-ТМ	00A-1731	AD00000 2	N-A-----			090050000000
INSTEAD	A05.00	ВМЕСТО-ТМ	00A-1732	AD01000 0	N-A-----			009100000000
RESISTANCE	N10.00	СОПРОТИВЛЕНТ -Е	00A-1733	ND11N100	N-A-----	P4		019250000000
PUTTING IN	A04.00	ПОДКЛЮЧ-И	00A-1734	AD01000 40	N-A-----	O000		188310000000
PIPE	N05.00	ЛАМПА	00A-1735	ND12F000	N-A-----			147000000000
..			00A-1736		N-A-----			098600000000

# HINDSIGHT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
RESISTANCE	N10.00	СОПРОТИВЛЕНТ -Е	00A-1726	ND11N100	N-A-----	P4		188310000000
THIS	P01.00	ЭТО-У	00A-1727	PKLI STD	N-A-----	P2P9		218923749996
SHOULD	A02.00	ДОЛЖЕН-О	00A-1728	AD00000 2	N-A-----	B0		054100000000
CONSIDERABLE	V21.00	ОУ-Т	00A-1729	VN 3000000 3	N-A-----			010605000000
GREATER	A02.00	БОЛЬШЕ-О	00A-1730	AD00000 2	N-A-----			072900000000
LARGE	A04.00	БОЛ.Ш-ТМ	00A-1731	AD00000 2	N-A-----			090050000000
INSTEAD	A05.00	ВМЕСТО-ТМ	00A-1732	AD01000 0	N-A-----			009100000000
RESISTANCE	N10.00	СОПРОТИВЛЕНТ -Е	00A-1733	ND11N100	N-A-----	P4		019250000000
PUTTING IN	A04.00	ПОДКЛЮЧ-И	00A-1734	AD01000 40	N-A-----	O000		188310000000
PIPE	N05.00	ЛАМПА	00A-1735	ND12F000	N-A-----			147000000000
..			00A-1736		N-A-----			098600000000

A Basic Phrase with a Noun Preceding an Adjective

Figure 5



# UNANALYZED TEXT

CLASS	RUSSIAN WORD	TRANSLATED	TEXT	ORGANIZED	3rd	DICTIONARY
NUMBER			SERIAL NO	WORD	SEMIORGANIZED	SERIAL NO
004-0002	АВТОМАТИЧЕСКИЙ	АВТОМАТИЧЕСКИЙ	004-0002	АВТОМАТ		1426700000000
004-0003	АВТОМАТИЧЕСКИЙ	АВТОМАТИЧЕСКИЙ	004-0003	АВТОМАТ		1943600000000
004-0004	АВТОМАТИЧЕСКИЙ	АВТОМАТИЧЕСКИЙ	004-0004	АВТОМАТ		1798700000000
004-0005	АВТОМАТИЧЕСКИЙ	АВТОМАТИЧЕСКИЙ	004-0005	АВТОМАТ		0003000000000

# ANALYZED TEXT

CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
00 1R	004-0002	АВТОМАТ	111 SUBJECT
00 1R	004-0003	АВТОМАТ	002 SUBJECT
00 1R	004-0004	АВТОМАТ	003 N COMP
00 1R	004-0005	АВТОМАТ	004 N COMP

# HINDSIGHT

INTERSECTING ARGUMENTS	ALTERNATIVE	
	ROLE	
004-0002	АВТОМАТ	111 L OBJ
004-0003	АВТОМАТ	111 L OBJ
004-0004	АВТОМАТ	111 L OBJ
004-0005	АВТОМАТ	111 L OBJ

A Noun Phrase  
Figure 6

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
NOTHING	P01.00	ON-A	\$ -0527	PN K STP 0	N-----		126772000002		
NOT	P01.00	NILH-EGC	\$ -0528	PN I STN 0	-G-----		1200P3035714		
DAY	V01.00	SKAZAL-A	\$ -0529	PN I STN 0	-N-----		110B100000000		
..	V01.00	..	\$ -0530	VS 0000000	SSS---AFD-	B3	184511904760		
..	V01.00	..	\$ -0531	VS 0000000	SSS---AFD-				
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT			SYNTACTIC ROLE		
NOTHING	P01.00 ON-A	00 1R	\$ -0527	PN K STP 0	N-----		III SUBJECT		
NOT	P01.00 NILH-EGC	00 09	\$ -0528	PN I STN 0	-G-----		527 N COMP		
DAY	V01.00 SKAZAL-A	00 12	\$ -0529	PN I STN 0	-N-----		INF NEGATIVE		
..	V01.00 ..	00 12	\$ -0530	VS 0000000	SSS000AFD0	B3	III V PRED		
..	V01.00 ..	00 0R	\$ -0531	VS 0000000	SSS000AFD0		FND OF SENT.		
HINDSIGHT									
PREDICTION	WIPER	---	580012000650	CGAC00000000000000	000	00000000	END OF SENT.		

A Pronoun Incorrectly Analyzed as a Noun  
Figure 7

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
			SERIAL NO.	WORD					
MANY	ADP.CC	WNOG-IE	00K-0178	KDKU400	0	-----N-A-----A-A-----		10827333332	
PHYSICAL	ADP.CC	FIZICHEK-IF	00K-0179	AD01000	0	-----N-A-----A-A-----		20830000000	
APPEARANCE	NIP.CC	JAVLENI-JA	00K-0180	MD11N000		-G-----N-A-----N-----	P4	21924000000	
REQUIRE	VO*.CC	TELEU-JIT	00K-0181	WNOOP5F400		-----T8AD-	B184B5	19950000000	
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE	
MANY	00	18	00K-0178	ADK0400	0	-----N-A-----A-A-----		III SUBJECT	
PHYSICAL	00	10	00K-0179	AD01000	0	-----N-A-----A-A-----		178 SUBJECT	
APPEARANCE	00	11	00K-0180	MD11N000		-----N-A-----N-----	R4	179 SUBJECT	
REQUIRE	00	12	00K-0181	WNOOP5F400		0000T8AD0	B184B5	III V PRED	
HINDSIGHT									
						INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
MANY	ADP.CC	WNOG-IE	00K-0178	ADK0400	0	-----N-----A-----		III SUBJECT	
PHYSICAL	ADP.CC	FIZICHEK-IF	00K-0179	AD01000	0	-----N-----A-----		III L OBJ	
APPEARANCE	NIP.CC	JAVLENI-JA	00K-0180	MD11N000	0	-----N-----A-----		III L OBJ	
REQUIRE	VO*.CC	TELEU-JIT	00K-0181	WNOOP5F400		-----N-----A-----	R4	III L OBJ	
PRECEDENCE	WIPED	181012011650	0000000000	000	0000000000				

The Analysis of an Adjective-noun Homograph  
Figure 8

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS MARKER (TRANSLITERATED)	RUSSIAN WORD	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
CONNECTED	WI TH	101.00	PR-T	004-0354	0	-----P-----	P00R00A00600	15424555554	
DIFFERENT		102.00	RAZLICHN-YA	004-0355	AD00000	-----GA--P-----	-----AA--A-----	17080000000	
RESEARCH		110.00	ISLEDUVANI- JAY	004-0356	ND11N000	-----P-----	-----N P4-----	08355000000	
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE				
CONNECTED	WI TH	00 17	004-0354	-----P-----	INF PREP				
DIFFERENT		00 19	004-0355	-----P-----	354 R COMP				
RESEARCH		00 23	004-0356	-----P-----	355 R COMP				

A Prepositional Phrase

Figure 9

A Prepositional Phrase with Number Ambiguity  
Figure 10



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS	RUSSIAN WORD MARKER (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd WORD	DICTIONARY SERIAL NO.	
1. REGION	101.00	-V	004-0357	0	--A--P--A--P	PA0R00AB0650	P2	000020000000	
2. REGION	101.00	0BLAST-1	004-0358	ND11F000	-G-C-PN-A--			121470000000	
3. REGION	101.00	SAN-TIME-TRON- Vx	004-0359	AR000000	-----GA--P			179870000000	
4. REGION	101.00	VOLN-	004-0360	ND12F000	-----G-----			022510000000	
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
1. REGION	00	24	004-0357	--A--P--A--P	PA0R00AB0650	P2		357	R COMP
2. REGION	00	24	004-0358	-----G-----				358	N COMP
3. REGION	00	30	004-0359	-----G-----				359	N COMP
4. REGION	00	34	004-0360	-----G-----					
HINDSIGHT									
	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE							
1. REGION	004-0358 ND11F000							351	OBJECT
2. REGION	004-0358 ND11F000							357	IND OBJ

A Prepositional Phrase with Case and Number Ambiguity  
Figure 12

UNANALYZED TEXT				ANALYZED TEXT			
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
penetration	N1A.00	PRONIKNOVENT -E	00K-0225	MD11M100	N-A-----	P4	103110000000
molecule	N04.00	MOLEKUL-	00K-0226	MD12F000	-----G-----		110049285710
we	001.00	ONN-OJ	00K-0227	DXPFESJPK	-G-CIP-----		124420555554
liquid	N0A.00	ZHIDKOST-I	00K-0228	MD11F100	-G-r-PN-A-----	P2	057070000000
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE	
penetration	N1A.00	PRONIKNOVENT -E	00	26	N-----	224	SUBJECT
molecule	N04.00	MOLEKUL-	00	27	-----G-----	225	N COMP
we	001.00	ONN-OJ	00	30	-G-----	226	N COMP
liquid	N0A.00	ZHIDKOST-I	00	34	-G-----	227	N COMP
HINDSIGHT				ALTERNATIVE			
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO.	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE	
we	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	222 IND OBJ
liquid	N0A.00	ZHIDKOST-I	00K-0228	00	-----F-----	P2	222 IND OBJ
molecule	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	226 N COMP
we	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	225 AGENT
we	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	225 AGENT
we	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	223 AGENT
we	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	223 AGENT
we	001.00	ONN-OJ	00K-0227	00	-----F-----	OGOCIP000000	222 IND OBJ

A Numeral Phrase with a Numeral of the First Type  
Figure 13



UNANALYZED TEXT									
FACT ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
100	101.00 -V	101.00 -V	00H-0511	00H-0511	--A--P--A--P	PAOP00AB0650	000020000000		
100	101.00 -V	101.00 -V	00H-0512	00H-0512	--GA--P--GA--P	00000000GACOP	000000000000		
100	101.00 -V	101.00 -V	00H-0513	00H-0513	-----P	-----F	192120000000		
100	101.00 -V	101.00 -V	00H-0514	00H-0514	-----M	-----M	180115000000		
ANALYZED TEXT									
	CHAIN NO.	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE		
100	00	04	00H-0511	00H-0511	--A--P--A--P	PAOP00AB0650	INF PREP		
100	00	09	00H-0512	00H-0512	--A--P--A--P	00000000GACOP	511 R COMP		
100	00	13	00H-0513	00H-0513	-----P	-----F	512 R COMP		
100	00	13	00H-0514	00H-0514	-----M	-----M	513 N COMP		
HINDSIGHT									
					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE		
100	001.00	001.00	00H-0512	00H-0512	--A--P--A--P	00000000GACOP	511 R COMP		

A Numeral Phrase with a Numeral of the First Type  
Figure 14

UNANALYZED TEXT							
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTONARY SERIAL NO.
FIVE	DO1.00	PJA-T.	\$ -0245	PA RACJBPVK	N-A--N-A--A--A--A--	000000000000	166572500000
CHIEF	AO2.00	OSTROUMN-YA	\$ -0246	AD01000 0	-----GA--P-----A	000000000000	130233333332
MATHEMATICIAN	NO1.10	MATEMATIK-OV	\$ -0247	NDALM000	-----GA--P-----A	000000000000	104711000000
NAVE TC	VIA.00	SP:SHL-T	\$ -0248	VSRK000000	INCHMPAY X	B3	160513333333
..			\$ -0249				
ANALYZED TEXT							
			CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE	
FIVE	DO1.00	PJA-T.	00 1A	\$	N-A--N-A--A--A--A--	000000000000	111 SUBJECT
CHIEF	AO2.00	OSTROUMN-YA	00 1C	\$	-----A--A--A--A--		245 SUBJECTN
MATHEMATICIAN	NO1.10	MATEMATIK-OV	00 09	\$	-----A--A--A--A--		246 SUBJECTN
(OBS.FNTEV)	VIA.00	SP:SHL-T	00 1D	\$	000PPPAAD0	B3	111 V PRED
..			00 05	\$			END OF SENT.
HINDSIGHT							
			CHAIN NO.	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE	
FIVE	DO1.00	PJA-T.	\$ -0245	PA RACJBPVK	N-A--N-A--A--A--A--	000000000000	111 SUBJECT
CHIEF	AO2.00	OSTROUMN-YA	\$ -0246	AD01000 0	-----A--A--A--A--	000000000000	111 L OBJ
MATHEMATICIAN	NO1.10	MATEMATIK-OV	\$ -0247	NDALM000	-----A--A--A--A--	000000000000	111 L OBJ
NAVE TC	VIA.00	SP:SHL-T	\$ -0248	VSRK000000	-----A--A--A--A--		111 L OBJ
..			\$ -0249		-----A--A--A--A--		111 L OBJ
							END OF SENT.

A Numeral Phrase with a Numeral of the Second Type  
Figure 15

UNANALYZED TEXT			
FIRST ENG. SH EQUIVALENT	CLASS MARKER (TRANSLITERATED)	TEXT SERIAL NO. WORD	3rd SEMIORGANIZED WORD
17C	DS1.00 0V-F	00X-0219 1A KFCJBPKK	N-A---N-A--- F-F---F-F---
17DUF	NSA.00 7H1PKOST-I	00X-0220 MD11F100	-G-C-N-A--- -F-F-F-F-F---
			04563333332
			05707000000
ANALYZED TEXT			
CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
00 1A	00X-0219	1A KFCJBPKK	216C OBJECT
00 1B	00X-0220	MD11F100	219C OBJECTN
HINDSIGHT			
		INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
17C	DS1.00 0V-F	---A---A--- --F---F---	OR0000ZV0000 216C OBJECT
17D	DS1.00 0V-F	---N---N--- --F---F---	OR0000ZV0000 212 SUBJECT
17E	DS1.00 0V-F	---N---N--- --F---F---	OR0000ZV0000 212 SUBJECT
17DUF	NSA.00 7H1PKOST-I	---G---G--- --F---F---	P2
17DUF	NSA.00 7H1PKOST-I	---G---G--- --F---F---	P2
			212 INC OBJ

A Numeral Phrase with a Numeral of the Third Type  
Figure 16

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD				
FOUR		D01.00	CHETVR-F	\$ -0235	0 RACJPVKK	N-A---N-A---A-A---A-A---	0R0000ZV0000	213500416666	DICTIONARY SERIAL NO.
BLACK		A02.00	CHERN-YF	\$ -0236	AD00000 0	---N-A---A-A---		213240000000	
FOUR		N04.00	KHIG-I	\$ -0237	MD11F000	-G---N-A---F-----F---		089100000000	
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT					
FOUR		00 24	\$ -0235	0A RACJPVKK	N-----N-----A-----A-----	0R0000ZV0000	111	SUBJECT	SYN-TACTIC ROLE
BLACK		00 10	\$ -0236	AD00000 0	---N-----A-----A-----		235	SUBJECT	
FOUR		00 09	\$ -0237	MD11F000	-G-----F-----		236	SUBJECT	
HINDSIGHT									
				INTERSECTING ARGUMENTS					
FOUR					N-----N-----A-----A-----	0R0000ZV0000	111	SUBJECT	ALTERNATIVE ROLE
FOUR					---A-----A-----A-----A-----		0R0000ZV0000	111	L OBJ
BLACK					---A-----A-----A-----A-----		0R0000ZV0000	111	L OBJ
FOUR					---A-----A-----A-----A-----		0R0000ZV0000	111	L OBJ
BLACK					---A-----A-----A-----A-----		0R0000ZV0000	111	L OBJ

A Numeral Phrase with a Numeral of the Third Type  
Figure 17

UNANALYZED TEXT			
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO
ONE	001.00	ОДИН	001
TWO	002.00	ДВА	002
THREE	003.00	ТРИ	003
FOUR	004.00	ЧЕТЫРЕ	004
FIVE	005.00	ПЯТЬ	005
SIX	006.00	ШЕСТЬ	006
SEVEN	007.00	СЕМЬ	007
EIGHT	008.00	ВОСЕМЬ	008
NINE	009.00	ДЕВЯТЬ	009
TEN	010.00	ДЕСЯТЬ	010
ONE HUNDRED	011.00	СТО	011
TWO HUNDRED	012.00	ДВЕ СТО	012
THREE HUNDRED	013.00	ТРИ СТО	013
FOUR HUNDRED	014.00	ЧЕТЫРЕ СТО	014
FIVE HUNDRED	015.00	ПЯТЬ СТО	015
SIX HUNDRED	016.00	ШЕСТЬ СТО	016
SEVEN HUNDRED	017.00	СЕМЬ СТО	017
EIGHT HUNDRED	018.00	ВОСЕМЬ СТО	018
NINE HUNDRED	019.00	ДЕВЯТЬ СТО	019
TEN HUNDRED	020.00	ДЕСЯТЬ СТО	020
ONE THOUSAND	021.00	ОДИН ТЫСЯЧА	021
TWO THOUSAND	022.00	ДВА ТЫСЯЧА	022
THREE THOUSAND	023.00	ТРИ ТЫСЯЧА	023
FOUR THOUSAND	024.00	ЧЕТЫРЕ ТЫСЯЧА	024
FIVE THOUSAND	025.00	ПЯТЬ ТЫСЯЧА	025
SIX THOUSAND	026.00	ШЕСТЬ ТЫСЯЧА	026
SEVEN THOUSAND	027.00	СЕМЬ ТЫСЯЧА	027
EIGHT THOUSAND	028.00	ВОСЕМЬ ТЫСЯЧА	028
NINE THOUSAND	029.00	ДЕВЯТЬ ТЫСЯЧА	029
TEN THOUSAND	030.00	ДЕСЯТЬ ТЫСЯЧА	030
ONE HUNDRED THOUSAND	031.00	ОДИН СТО ТЫСЯЧ	031
TWO HUNDRED THOUSAND	032.00	ДВЕ СТО ТЫСЯЧ	032
THREE HUNDRED THOUSAND	033.00	ТРИ СТО ТЫСЯЧ	033
FOUR HUNDRED THOUSAND	034.00	ЧЕТЫРЕ СТО ТЫСЯЧ	034
FIVE HUNDRED THOUSAND	035.00	ПЯТЬ СТО ТЫСЯЧ	035
SIX HUNDRED THOUSAND	036.00	ШЕСТЬ СТО ТЫСЯЧ	036
SEVEN HUNDRED THOUSAND	037.00	СЕМЬ СТО ТЫСЯЧ	037
EIGHT HUNDRED THOUSAND	038.00	ВОСЕМЬ СТО ТЫСЯЧ	038
NINE HUNDRED THOUSAND	039.00	ДЕВЯТЬ СТО ТЫСЯЧ	039
TEN HUNDRED THOUSAND	040.00	ДЕСЯТЬ СТО ТЫСЯЧ	040
ONE MILLION	041.00	ОДИН МИЛЛИОН	041
TWO MILLION	042.00	ДВА МИЛЛИОНА	042
THREE MILLION	043.00	ТРИ МИЛЛИОНА	043
FOUR MILLION	044.00	ЧЕТЫРЕ МИЛЛИОНА	044
FIVE MILLION	045.00	ПЯТЬ МИЛЛИОНА	045
SIX MILLION	046.00	ШЕСТЬ МИЛЛИОНА	046
SEVEN MILLION	047.00	СЕМЬ МИЛЛИОНА	047
EIGHT MILLION	048.00	ВОСЕМЬ МИЛЛИОНА	048
NINE MILLION	049.00	ДЕВЯТЬ МИЛЛИОНА	049
TEN MILLION	050.00	ДЕСЯТЬ МИЛЛИОНА	050
ONE HUNDRED MILLION	051.00	ОДИН СТО МИЛЛИОНОВ	051
TWO HUNDRED MILLION	052.00	ДВЕ СТО МИЛЛИОНОВ	052
THREE HUNDRED MILLION	053.00	ТРИ СТО МИЛЛИОНОВ	053
FOUR HUNDRED MILLION	054.00	ЧЕТЫРЕ СТО МИЛЛИОНОВ	054
FIVE HUNDRED MILLION	055.00	ПЯТЬ СТО МИЛЛИОНОВ	055
SIX HUNDRED MILLION	056.00	ШЕСТЬ СТО МИЛЛИОНОВ	056
SEVEN HUNDRED MILLION	057.00	СЕМЬ СТО МИЛЛИОНОВ	057
EIGHT HUNDRED MILLION	058.00	ВОСЕМЬ СТО МИЛЛИОНОВ	058
NINE HUNDRED MILLION	059.00	ДЕВЯТЬ СТО МИЛЛИОНОВ	059
TEN HUNDRED MILLION	060.00	ДЕСЯТЬ СТО МИЛЛИОНОВ	060
ONE BILLION	061.00	ОДИН МИЛИАРД	061
TWO BILLION	062.00	ДВА МИЛИАРДА	062
THREE BILLION	063.00	ТРИ МИЛИАРДА	063
FOUR BILLION	064.00	ЧЕТЫРЕ МИЛИАРДА	064
FIVE BILLION	065.00	ПЯТЬ МИЛИАРДА	065
SIX BILLION	066.00	ШЕСТЬ МИЛИАРДА	066
SEVEN BILLION	067.00	СЕМЬ МИЛИАРДА	067
EIGHT BILLION	068.00	ВОСЕМЬ МИЛИАРДА	068
NINE BILLION	069.00	ДЕВЯТЬ МИЛИАРДА	069
TEN BILLION	070.00	ДЕСЯТЬ МИЛИАРДА	070
ONE HUNDRED BILLION	071.00	ОДИН СТО МИЛИАРДОВ	071
TWO HUNDRED BILLION	072.00	ДВЕ СТО МИЛИАРДОВ	072
THREE HUNDRED BILLION	073.00	ТРИ СТО МИЛИАРДОВ	073
FOUR HUNDRED BILLION	074.00	ЧЕТЫРЕ СТО МИЛИАРДОВ	074
FIVE HUNDRED BILLION	075.00	ПЯТЬ СТО МИЛИАРДОВ	075
SIX HUNDRED BILLION	076.00	ШЕСТЬ СТО МИЛИАРДОВ	076
SEVEN HUNDRED BILLION	077.00	СЕМЬ СТО МИЛИАРДОВ	077
EIGHT HUNDRED BILLION	078.00	ВОСЕМЬ СТО МИЛИАРДОВ	078
NINE HUNDRED BILLION	079.00	ДЕВЯТЬ СТО МИЛИАРДОВ	079
TEN HUNDRED BILLION	080.00	ДЕСЯТЬ СТО МИЛИАРДОВ	080
ONE TRILLION	081.00	ОДИН ТРИЛИАРД	081
TWO TRILLION	082.00	ДВА ТРИЛИАРДА	082
THREE TRILLION	083.00	ТРИ ТРИЛИАРДА	083
FOUR TRILLION	084.00	ЧЕТЫРЕ ТРИЛИАРДА	084
FIVE TRILLION	085.00	ПЯТЬ ТРИЛИАРДА	085
SIX TRILLION	086.00	ШЕСТЬ ТРИЛИАРДА	086
SEVEN TRILLION	087.00	СЕМЬ ТРИЛИАРДА	087
EIGHT TRILLION	088.00	ВОСЕМЬ ТРИЛИАРДА	088
NINE TRILLION	089.00	ДЕВЯТЬ ТРИЛИАРДА	089
TEN TRILLION	090.00	ДЕСЯТЬ ТРИЛИАРДА	090
ONE QUADRILLION	091.00	ОДИН КВАДРИЛИАРД	091
TWO QUADRILLION	092.00	ДВА КВАДРИЛИАРДА	092
THREE QUADRILLION	093.00	ТРИ КВАДРИЛИАРДА	093
FOUR QUADRILLION	094.00	ЧЕТЫРЕ КВАДРИЛИАРДА	094
FIVE QUADRILLION	095.00	ПЯТЬ КВАДРИЛИАРДА	095
SIX QUADRILLION	096.00	ШЕСТЬ КВАДРИЛИАРДА	096
SEVEN QUADRILLION	097.00	СЕМЬ КВАДРИЛИАРДА	097
EIGHT QUADRILLION	098.00	ВОСЕМЬ КВАДРИЛИАРДА	098
NINE QUADRILLION	099.00	ДЕВЯТЬ КВАДРИЛИАРДА	099
TEN QUADRILLION	100.00	ДЕСЯТЬ КВАДРИЛИАРДА	100

A Numeral Phrase with a Numeral of the Third Type  
Figure 18

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DIC*IONARY SERIAL NO.		
TWO MINORFE	001.00	OVST-I	\$ -0205	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	045705000000		
1-JPTV	001.00	TRICTSA-T	\$ -0206	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	200774027779		
TWO	001.00	OV-A	\$ -0207	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	045676666666		
CHLOVEK-A	001.00	CHLOVEK-A	\$ -0208	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	045676666666		
OF	001.00	BYL-U	\$ -0209	VN 3000000 3	SSS---AND-	B3	010806666666		
HERE	001.00	70-FS	\$ -0210	M			072000000000		
..			\$ -0211						
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
TWO MINORFE	00 1R	\$ -0205	CA RACUPKKC	N---N---A---A---A---	000000000000	111	SUBJECT		
1-JPTV	00 10	\$ -0206	CA RACUPKKC	N---N---A---A---A---	000000000000	205	SUBJECT		
TWO	00 11	\$ -0207	CA RACUPKKC	N---N---A---A---A---	000000000000	206	SUBJECT		
(CORP.ENTRY)	00 12	\$ -0208	INDA2M100	N---N---A---A---A---	000000000000	207	SUBJECT		
OF	00 12	\$ -0209	VN 3000000 3	SSS000AND0	B3	111	V PRED		
HERE	00 0A	\$ -0210	M			INF	ADVB		
..	00 0A	\$ -0211				END	OF SENT.		
HINDSIGHT									
	CHAIN NO	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE					
TWO MINORFE	00 1R	\$ -0205	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	INF	NUMERAL		
1-JPTV	00 10	\$ -0206	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	INF	NUMERAL		
TWO	00 11	\$ -0207	CA RACUPKKC	N-A---N-A---A-A---A-A---	000000000000	111	SUBJECT		
(CORP.ENTRY)	00 12	\$ -0208	INDA2M100	N-A---N-A---A-A---A-A---	000000000000	111	L OBJ		
OF	00 12	\$ -0209	VN 3000000 3	SSS000AND0	B3	111	L OBJ		
HERE	00 0A	\$ -0210	M			INF	NUMERAL		
..	00 0A	\$ -0211				INF	NUMERAL		
PREDICTION	00 0A	\$ -0211				INF	NUMERAL		

A Chain Numeral

Figure 19

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI ORGANIZED WORD	DICTIONARY SERIAL NO.
UPE HINDREN	DO1.00 ST-0	ST-0	-0196	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0197	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0198	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0199	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0200	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0201	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0202	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0203	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666
UPE HINDREN	DO1.00 ST-0	ST-0	-0204	0 HACJYBKK	N-A--N-A--A-A--A-A--	000000000000	101318666666

# ANALYZED TEXT

CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT
00 10	10	N-A--N-A--A-A--A-A--	111 SUBJECT

# HINDSIGHT

INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL
N-A--N-A--A-A--A-A--	111 NUMERAL

A Chain Numeral  
Figure 20

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
COME (TC)	V04.00	SVOP-ITCJA	004-0262	VNR30900*0	--T---BADR	E6 B18485	10150333333		
TC	101.00	K-	004-0263	P	---C---C--	00000000000	08480000000		
PREPARATION	N10.00	IZGOTOVLENI- JU	004-0264	ND110000	---N-----	P4	07527500000		
ANALYZED TEXT									
			CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE			
COME (TC)	V04.00	SVOP-ITCJA	00	14	0010000ADR	E6 B18485	III	V	PRED
TC	101.00	K-	00	06	---C---C--	00000000000	262	R	OBJ
PREPARATION	N10.00	IZGOTOVLENI- JU	00	08	---N-----	R4	263	R	COMP
HINDSIGHT									
TC	101.00	K-	004-0263	P	---C---C--	00000000000	INF	PREP	
PREPARATION	N10.00	IZGOTOVLENI- JU	004-0264	ND110000	---N-----	R4	III	IND	OBJ

A Verb Phrase with a Preposition Object

Figure 21



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
ACQUIRE	VERB	PRIBYVAT	000-0181	UNCOSEFAC	---	---	9050000000		
FOR	PREP	VLIV	000-0182	---	---	---	5197000000		
VERB	VERB	PRIBYVAT	000-0183	PAK SAS	---	---	8150918181		
STUDY	VERB	PRIBYVAT	000-0184	PRILNOC	---	---	7819000000		
FLUTTER	VERB	PRIBYVAT	000-0185	PRILNOC	---	---	2037750000		
FLUTTER	VERB	PRIBYVAT	000-0186	PRILNOC	---	---	7300000000		
PROBABLY	VERB	PRIBYVAT	000-0187	PRILNOC	---	---	7154000000		
ANALYZED TEXT									
			CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE			
ACQUIRE	VERB	PRIBYVAT	00 12	000-0181	UNCOSEFAC	---	---		
FOR	PREP	VLIV	00 07	000-0182	---	---	---		
VERB	VERB	PRIBYVAT	00 08	000-0183	PAK SAS	---	---		
STUDY	VERB	PRIBYVAT	00 13	000-0184	PRILNOC	---	---		
FLUTTER	VERB	PRIBYVAT	00 14	000-0185	PRILNOC	---	---		
FLUTTER	VERB	PRIBYVAT	00 15	000-0186	PRILNOC	---	---		
PROBABLY	VERB	PRIBYVAT	00 16	000-0187	PRILNOC	---	---		
HINDSIGHT									
ACQUIRE	VERB	PRIBYVAT	000-0181	PAK SAS	---	---	181	OPJCT	---
FOR	PREP	VLIV	000-0182	PRILNOC	---	---	181	OPJCT	---
VERB	VERB	PRIBYVAT	000-0183	PRILNOC	---	---	181	OPJCT	---
STUDY	VERB	PRIBYVAT	000-0184	PRILNOC	---	---	---	---	---
FLUTTER	VERB	PRIBYVAT	000-0185	PRILNOC	---	---	---	---	---
FLUTTER	VERB	PRIBYVAT	000-0186	PRILNOC	---	---	---	---	---
PROBABLY	VERB	PRIBYVAT	000-0187	PRILNOC	---	---	---	---	---

Two Verb Phrases  
Figure 22

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIORGANIZED WORD	DICTIONARY SERIAL NO.	
CALL RE		VOI.00	СТАЛКИВА-ПЕ JA	00X-0151	VN 0J10000	--T---GADP	B0B1B4B6	19164222222	
ATTN		101.00	PE	00X-0152	N 0	-GA-I--GA-I-	1GARGOCAB111	17891000000	
UTHER		ACB.00	PELG-IMT	00X-0153	KDK1000 0	-----I-		05570000000	
WOLF LLE		NOB.00	WOLF-KUL-AM	00X-0154	MD12F000	-----E-		110049285710	
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT					
CALL RE		00 19	00X-0151	VN 0J10000	00T000GADP	B0B1B4B6	III	V PRED	
ATTN		00 04	00X-0152	N 0	-----I-	1GARGOCAB111	151	R OBJ	
UTHER		00 04	00X-0153	KDK1000 0	-----I-		152	R COMP	
WOLF LLE		00 12	00X-0154	MD12F000	-----E-		153	R COMPM	
HINDSIGHT									
			00X-0152	P	INTERSECTING ARGUMENTS				
ATTN		101.00	PE	00X-0152	P	-GA-I--GA-I-	1GARGOCAB111	INF	PREP
UTHER		ACB.00	PELG-IMT	00X-0153	KDK1000 0	-----I-		152	R COMP

A Verb Phrase with a Preposition Object  
Figure 23

UNANALYZED TEXT									
POST INDEX	CLASS	RUSSIAN WORD	TEXT	ORGANIZED	ALTERNATIVE	ARGUMENTS	3rd	SEMI ORGANIZED	DICTIONARY
NUMBER	MARKER	MARKER	SERIAL NO.	WORD			WORD	WORD	SERIAL NO.
1	A	АВТО	001-0043	AD0100	---	---	P200	LP	1856-00000000
2	A	АВТО	001-0044	ADK2F000	---	---			1274-00000000
3	A	АВТО	001-0045	PA K ATF 0	---	---			0272-99999999
4	A	АВТО	001-0046	ND111100	---	---	P4		0726-00000000
ANALYZED TEXT									
POST INDEX	CLASS	RUSSIAN WORD	CHAIN NO.	SIZE OF POOL	PREFERRED	ARGUMENT			SYNTACTIC
NUMBER	MARKER	MARKER							ROLE
1	A	АВТО	00	24	---	---	P200	LP	040 MODIFER
2	A	АВТО	01	11	---	---			INF ARBTR
3	A	АВТО	02	11	---	---			INF ARBTR
4	A	АВТО	03	12	---	---	R4		045 ARBTR M
HINDSIGHT									
POST INDEX	CLASS	RUSSIAN WORD	CHAIN NO.	SIZE OF POOL	INTERSECTING	ARGUMENTS			ALTERNATIVE
NUMBER	MARKER	MARKER							ROLE
1	A	АВТО	00	24	---	---			INF ARBTR
2	A	АВТО	01	11	---	---			INF ARBTR
3	A	АВТО	02	11	---	---			INF ARBTR
4	A	АВТО	03	12	---	---			INF ARBTR

An Analysis with a Missing Government Code  
Figure 24



An Object of a Participle

UNANALYZED TEXT									
CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	DICTIONARY SERIAL NO.			
1. LIVING	NOR.00 USTROJSTV-A	00A-0154	MD11N000	-G---N-A---N---N-N---		206900000000			
2. OCCUPATIONAL	AO4.00 POZVOLJAJUSH CH-IE	00A-0155	AD0100 40	-----N-A---A---A---	P200	149110000000			
3. PRESENTIAL	VO4.00 VYFLI-T	00A-0156	VS OP70000	-----F-----	B0B6	021908000000			
4. PRESENTIAL	AO2.00 OSNOVN-HU	00A-0157	AD00000 0	-----A-----		129400000000			
5. PRESENTIAL	NO4.00 CHASTOT-I	0. A-0159	MT12F000	-----A-----		212900000000			
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
1. LIVING	NOR.00	USTROJSTV-A	00 1P 00A-0154 MD11N000	111 SUBJECT					
2. OCCUPATIONAL	AO4.00	POZVOLJAJUSH CH-IE	00 09 00A-0155 AD0100 40	114 COMMA					
3. PRESENTIAL	VO4.00	VYFLI-T	00 20 00A-0156 VS OP70000	154 MODIFIER					
4. PRESENTIAL	AO2.00	OSNOVN-HU	00 16 00A-0157 AD00000 0	156 V MAST					
5. PRESENTIAL	NO4.00	CHASTOT-I	00 17 00A-0159 AD00000 0	157 OBJECT					
			00 21 00A-0159 MT12F000	158 OBJECTM					
HINDSIGHT									
	CHAIN NO	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE					
1. LIVING	NOR.00	USTROJSTV-A	00A-0154 MD11N000	111 L OBJ					
2. OCCUPATIONAL	AO4.00	POZVOLJAJUSH CH-IE	00A-0155 AD0100 40	114 CLAUSER					
3. PRESENTIAL	AO2.00	OSNOVN-HU	00A-0156 AD0100 40	114 CONJUNCT					
4. PRESENTIAL	NO4.00	CHASTOT-I	00A-0159 MT12F000	111 L OBJ					

A Verb Master of a Participle  
Figure 27

A Verb Master of a Noun

A Verb Master of a Noun

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS	RUSSIAN WORD MARKER (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
SPONTANEOUS	A01.00	ESTESTVFN-C	00K-0875	AD00000 2 0	N-----	T7	054540000000		
CALL	V05.41	NAZVA-T	00K-0876	VSOOP3L400	F-----	B086	112052352940		
POSSESS	A01.00	VYLEFEN-YU	00K-0877	AD00000 30	N-A-----	P700	031940000000		
CLASS	PC1.00	N-AMT	00K-0878	PN A PVP 0	-----I-		110800000000		
NAME	N01.00	VLASS-	00K-0879	NC11M000	N-A-----		088450000000		
PROCESSES	A02.00	VLUCHA-M-YA	00K-0880	AD00000 0	-----G-		18571145827		
PROCESSES	N01.00	PRUTSEFS-OV	00K-0881	NC11M000	-----A-		164970000000		
PROCESSES	N01.00	PRUTSEFS-AMT	00K-0882	NC11M000	-----M-				
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE		
SPONTANEOUS	00	21	00K-0875	AD00000 2 0	N-----		T7	B74	A PRED
CALL	00	19	00K-0876	VSOOP3P400	FO-----	B086		P75	V MAST
POSSESS	00	23	00K-0877	AD00000 30	-----I-	R000		876	OBJECT
CLASS	00	30	00K-0878	PN A PVP 0	-----M-			877	AGENT
NAME	00	34	00K-0879	NC11M000	-----A-			879	OBJECT
PROCESSES	00	27	00K-0880	AD00000 0	-----G-			880	N CORPM
PROCESSES	00	31	00K-0881	NC11M000	-----M-			876	OBJECT
PROCESSES	00	31	00K-0882	NC11M000	-----M-				
HINDSIGHT									
					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE		
SPONTANEOUS			00K-0875	AD00000 2 0	N-----		T7	INF	ADVB
CALL			00K-0876	VSOOP3P400	FO-----	B086		H74	SUBJECT
POSSESS			00K-0878	PN A PVP 0	-----I-			876	OBJECT

A Participle Used "Adjectivally"

Figure 29



# UNANALYZED TEXT

TEXT	ORGANIZED	3rd	SEMIORGANIZED	DICTIONARY
SERIAL NO.	WORD	WORD	WORD	SERIAL NO.
1	100000	100000	100000	100000
2	100000	100000	100000	100000
3	100000	100000	100000	100000
4	100000	100000	100000	100000
5	100000	100000	100000	100000

# ANALYZED TEXT

CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
1	1	100000	100000
2	1	100000	100000
3	1	100000	100000
4	1	100000	100000
5	1	100000	100000

# HINDSIGHT

INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
100000	100000
100000	100000
100000	100000
100000	100000
100000	100000

An Object Overridden by a Master

Figure 30

UNANALYZED TEXT				
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD
MATCHING	N01.00	POUPUR-	00A-2438	ND11M000
1. PRE	N04.00	LAMP-	00A-2439	ND12F000
2. SENSITIVE	N01.00	USUSCHELSTVIA N-A	00A-2440	AD01000 2 0
3. ACTIONAL	N01.00	USUSCHELSTVIA N-A	00A-2441	VN 0P30000 0
4. ACTIONAL	N01.00	USUSCHELSTVIA N-A	00A-2442	ND11M000
5. ACTIONAL	N01.00	USUSCHELSTVIA N-A	00A-2443	ND11M000
ANALYZED TEXT				
MATCHING	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
1. PRE	00 18	00A-2438	ND11M000	III SUBJECT
2. SENSITIVE	00 09	00A-2439	ND12F000	438 N CORP
3. ACTIONAL	00 12	00A-2440	AD01000 2 0	IMF ADVB
4. ACTIONAL	00 12	00A-2441	VN 0P40000 0	III V PREP
5. ACTIONAL	00 06	00A-2442	ND11M000	441 AGENT
	00 07	00A-2443	ND11M000	442 N CORP
HINDSIGHT				
MATCHING	N01.00	POUPUR-	00A-2438	ND11M000
			INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
			--A-----	III L ORJ

UNANALYZED TEXT						
TEXT	SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTONARY SERIAL NO	
RUSSIAN WORD	000120000000	RUSSIAN WORD	---A---A---P	PACR00340120	000120000000	
RUSSIAN WORD	022550000000	RUSSIAN WORD	---A---A---P	PACR00340120	022550000000	
RUSSIAN WORD	066020000000	RUSSIAN WORD	---A---A---P	PACR00340120	066020000000	
RUSSIAN WORD	051950000000	RUSSIAN WORD	---A---A---P	PACR00340120	051950000000	
ANALYZED TEXT						
CHAIN NO	SIZE OF POOL	TEXT	PREFERRED ARGUMENT	SYNTACTIC ROLE		
01	42	RUSSIAN WORD	---A---A---P	PACR00340120	INF PREP	
02	42	RUSSIAN WORD	---A---A---P	PACR00340120	446 R COMP	
03	42	RUSSIAN WORD	---A---A---P	PACR00340120	INF COMMA	
04	42	RUSSIAN WORD	---A---A---P	PACR00340120	487 MODIFIER	
05	42	RUSSIAN WORD	---A---A---P	PACR00340120	449 AGENT	
HINDSIGHT						
CHAIN NO	SIZE OF POOL	TEXT	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE		
01	42	RUSSIAN WORD	---A---A---P	PACR00340120	INF CLAUSER	
02	42	RUSSIAN WORD	---A---A---P	PACR00340120	INF CONJUNCT	
03	42	RUSSIAN WORD	---A---A---P	PACR00340120	444 L OBJ	
04	42	RUSSIAN WORD	---A---A---P	PACR00340120	435 MODIFIER	

An Agent of a Participle  
Figure 32

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD				
AGENT		NOUN	АГЕНТ	004-0466	ND11M000				
AGENT		NOUN	АГЕНТ	004-0467	ND11M000				
AGENT		NOUN	АГЕНТ	004-0468	ND11M100				
AGENT		NOUN	АГЕНТ	004-0469	VN 0P30000				
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL						
AGENT		00	3A	004-0466	ND11M000				
AGENT		00	3A	004-0467	ND11M000				
AGENT		00	3A	004-0468	ND11M100				
AGENT		00	3A	004-0469	VN 0P30000				
HINDSIGHT									
				004-0466	ND11M000				
				004-0468	ND11M100				
UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
AGENT		NOUN	АГЕНТ	004-0466	ND11M000	N-A	PU	066015000000	SYNTACTIC ROLE
AGENT		NOUN	АГЕНТ	004-0467	ND11M000	-G		022500000000	
AGENT		NOUN	АГЕНТ	004-0468	ND11M100	-M		051900000000	
AGENT		NOUN	АГЕНТ	004-0469	VN 0P30000	-I	B1B4B5	197400000000	
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL						
AGENT		00	3A	004-0466	ND11M000	N-A	R4	465 SUBJECT	SYNTACTIC ROLE
AGENT		00	3A	004-0467	ND11M000	-G		466 N COMP	
AGENT		00	3A	004-0468	ND11M100	-M		466 AGENT	
AGENT		00	3A	004-0469	VN 0P30000	-I	B1B4B5	465 V PREL	
HINDSIGHT									
				004-0466	ND11M000	-A	R4	465	ALTERNATIVE ROLE
				004-0468	ND11M100	-I		465	

An Agent of a Noun  
Figure 33

An Analysis Not Recognizing a Copulative Verb  
Figure 34

Figure 34

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS	RUSSIAN WORD MARKER (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIOrganized WORD	DICTIONARY SERIAL NO.		
SPECIAL	AC	SPETSIAL	0218	AD00000	-GA		189900000000		
NAME	AC	IMEN	0219	AD00000	-G		213700000000		
NUMBER	AC	CHISLO	0220	AD00000	-N		1123100000000		
NUMBER	AC	CHISLO	0221	AD00000	-N		0901100000000		
NUMBER	AC	CHISLO	0222	AD00000	-N				
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
SPECIAL	03	13	YV-0218	AD00000	-G		217	N	COMP
NAME	03	17	YV-0219	AD00000	-G		218	N	COMP
NUMBER	03	17	YV-0220	AD00000	-G		219	MODIFIER	
NUMBER	03	28	YV-0221	AD00000	-G		221	AGENT	
NUMBER	03	28	YV-0222	AD00000	-G				
HINDSIGHT									
SPECIAL	03	13	YV-0220	AD00000	-G		217	N	COMP
NAME	03	17	YV-0221	AD00000	-G		218	N	COMP
NUMBER	03	17	YV-0222	AD00000	-G		219	MODIFIER	
NUMBER	03	28	YV-0223	AD00000	-G		221	AGENT	
INTERSECTING ARGUMENTS									
SPECIAL	03	13	YV-0220	AD00000	-G		217	N	COMP
NAME	03	17	YV-0221	AD00000	-G		218	N	COMP
NUMBER	03	17	YV-0222	AD00000	-G		219	MODIFIER	
NUMBER	03	28	YV-0223	AD00000	-G		221	AGENT	

An Analysis with Agent-object Ambiguity  
Figure 35



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd WORD	DICTIONARY SERIAL NO.	
BF	V21.00	BYL-U	00K-0508	VN 3000000 3	SSS---AND-	B3		010806666666	
BIT	AC1.00	POLOZHEN-O	00K-0509	AD00000 230	N-----	P300		150400000000	
FUNDAMENTAL	AC2.00	FUNDAMENTAL N-VVI	00K-0510	AD00000 0	N-----			211027500000	
MARK	NC4.00	AGENT-AVI	00K-0511	MD12F100	I-----			166600000000	
ANALYZED TEXT									
	CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
BF	00 17	00K-0508	VN 3000000 3	SSS000AND0	B3			III	V PRED
BIT	00 06	00K-0509	AD00000 230	N-----	R400			508	V COMP
FUNDAMENTAL	00 09	00K-0510	AD00000 0	N-----				509	AGENT
MARK	00 10	00K-0511	MD12F100	I-----				510	AGENT M

A Verb Complement of a Form of BYT' (быть)  
Figure 37





FIRST ENGLISH EQUIVALENT		CLASS RUSSIAN WORD MARKER (TRANSLITERATED)		UNANALYZED TEXT				ANALYZED TEXT		HINDSIGHT	
				TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	SYNTACTIC ROLE			
IT	STUDENT	P01.00 ON-	PN K STP 0	-0045	PN K STP 0	N		111 SUBJECT			
LF		V20.00 XCH-ET	VN OP30000 3	-0046	VN OP30000 3	M	P9 B1	111 V PRED			
STUDENT		V21.00 BY-T	VN 300000 3	-0047	VN 300000 3	---BAD-		084 V MAST			
		N01.00 STUDENT-OM	NDALH000	-0048	NDALH000	F		087 OBJECT			
				-0049		---		END OF SENT.			
IT	STUDENT	P01.00 ON-	PN K STP 0	-0045	PN K STP 0	N		111 SUBJECT			
STUDENT		V20.00 XCH-ET	VN OP30000 3	-0046	VN OP30000 3	M	P9 B1	111 V PRED			
		V21.00 BY-T	VN 300000 3	-0047	VN 300000 3	---BAD-		084 V MAST			
		N01.00 STUDENT-OM	NDALH000	-0048	NDALH000	F		087 OBJECT			
				-0049		---		END OF SENT.			

An Instrumental Object of a Form of BYT' (6yTb)  
Figure 39

A Predicate Adjective Following a Form of Быт' (быть)  
Figure 40

A Predicate Adjective Following a Form of Быт' (быть)  
Figure 40

UNANALYZED TEXT									
CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.			
ARTICLE	NOM.20 STAT.-I	00H-0147	ND11F000	-G---N-A---		192120000000			
COLLECTION	NOM.10 SECPNIK-A	00H-0148	ND11F000	-G---N-A---		180115000000			
ACTUAL	ACC.00 JAVLJA-JUTSU A	00H-0149	VN 0000000	---TBADR	8081B4B6	219270000000			
SHORT	ACC.00 FAATICHFSK-I	00H-0150	AD010000	---N---		207915000000			
SURVEY	NOM.00 KRATK-IMI	00H-0151	AD000000	---N---		099900000000			
ACTIVITY	NOM.00 DEZPR-AMI	00H-0152	ND11F000	---I---		121170000000			
APPARENTLY	NOM.00 DEZPR-AMI	00H-0153	ND11F000	---G---		176570000000			
TWENTY	NOM.00 DEZPR-AMI	00H-0154	ND11F000	-G-C-PN-A---	P2	050100000000			
ORGANIZATION	NOM.00 DEZPR-AMI	00H-0155	P	-G---G---		126317500000			
	NOM.00 DEZPR-AMI	00H-0156	P KACJUPV	-G-C-P-G-C-P		126315000000			
	NOM.00 DEZPR-AMI	00H-0157	AD010000	---GA-P		000000000000			
	NOM.00 DEZPR-AMI	00H-0158	ND11F000	---G---		11577952805			
	NOM.00 DEZPR-AMI	00H-0159	ND11F000	---G---		128570000000			
ANALYZED TEXT									
CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE				
ARTICLE	NOM.20 STAT.-I	00	18	00H-0147	ND11F000	111 SUBJECT			
COLLECTION	NOM.10 SECPNIK-A	00	09	00H-0148	ND11F000	147 N COMP			
ACTUAL	ACC.00 JAVLJA-JUTSU A	00	12	00H-0149	VN 0000000	111 V PREP			
SHORT	ACC.00 FAATICHFSK-I	00	06	00H-0150	AD010000	INF ADVB			
SURVEY	NOM.00 KRATK-IMI	00	06	00H-0151	AD000000	149 AGENT			
ACTIVITY	NOM.00 DEZPR-AMI	00	07	00H-0152	ND11F000	151 AGENT H			
APPARENTLY	NOM.00 DEZPR-AMI	00	10	00H-0153	ND11F000	152 N COMP			
TWENTY	NOM.00 DEZPR-AMI	00	14	00H-0154	ND11F000	153 N COMP			
TWENTY	NOM.00 DEZPR-AMI	00	14	00H-0155	H	INF ADVB			
TWENTY	NOM.00 DEZPR-AMI	00	14	00H-0156	ND11F000	154 N COMP			
SCIENTIFIC P	DEZPR-AMI	00	14	00H-0157	AD010000	156 N COMP			
ORGANIZATION	NOM.00 DEZPR-AMI	00	17	00H-0158	ND11F000	157 N COMP			
HINDSIGHT									
CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE				
ARTICLE	NOM.20 STAT.-I	00H-0147	ND11F000	---F---	111 L OBJ				
ACTIVITY	NOM.00 DEZPR-AMI	00H-0152	ND11F000	---F---	111 IND OBJ				
APPARENTLY	NOM.00 DEZPR-AMI	00H-0154	ND11F000	---F---	INF PREP				
TWENTY	NOM.00 DEZPR-AMI	00H-0155	P	---F---	GOORH0200200				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	154 N COMP				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	NOM.00 DEZPR-AMI	00H-0156	DN KACJUPV	---F---	000000000000				
TWENTY	N								

The Analysis of a Preposition-adverb Homograph

UNANALYZED TEXT										
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	FORMAL	CHAIN NO	SIZE OF POOL	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO
FORMAL	A02+00	FORMALIN-O	!	00	18	00K-0420	A000000 2 0	N-----		20936666666
IF	101+00	FSL-I	!	00	05	00K-0421	C		P9	0565200000000
IF IMPORTANT	V12+00	ZADAVA-T-SJA	!	00	17	00K-0422	C	FR	B0B4	0608700000000
ONLY	101+00	TOL-K-U	!	00	14	00K-0423	C			1981525000000
ONLY	101+00	TOL-K-U	!	00	11	00K-0424	H			1981500000000
ELUCIDATION	N10+00	VYJASNENI-EM	!	00	11	00K-0425	W		P4	0596200000000
MATHEMATICAL	A04+00	MAT-MATICHES K-U	!	00	14	00K-0426	A000000 0			1047140000000
PICTURE	N04+00	KARTIN-Y	!	00	18	00K-0427	ND12+000	-F-FFF-		0865200000000
APPEARANCE	N10+00	JAVLENI-J	!	00	19	00K-0428	ND11+000	-G--N-A--	P4	2192400000000
PRECISE	A02+00	TOLCHN-U	!	00	22	00K-0429	A000000 2 0	N-----		1987200000000
AS THOUGH	101+00	TOLCHN-U	!	00	23	00K-0430	C			1987150000000
SC	101+00	TAK-	!	00	26	00K-0431	H			1952700000000
(EMPHATIC)	101+00	ZM-F	!	00	26	00K-0432	H			0565000000000
AFTER ALL	101+00	ZM-F	!	00	26	00K-0432	H			0565000000000
FLOW	V01+00	PRUTEKA-JUT	!	00	11	00K-0432	W	---TSAD-	B0B1B4B6	1642433333333
AND	101+00	-I	!	00	14	00K-0433	W			0000900000000
ALSO	101+00	-I	!	00	23	00K-0434	H			0000850000000
OTHER	A08+00	PRUG-IE	!	00	26	00K-0435	K0K1000 0	---N-A---		0857900000000
APPEARANCE	N10+00	JAVLENI-JA	!	00	30	00K-0436	ND11+000	-G--N-A--	P4	2192400000000
!		!	!	00	31	00K-0437				
ANALYZED TEXT										
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	FORMAL	CHAIN NO	SIZE OF POOL	TEXT SERIAL NO	ORGANIZED WORD	PREFERRED ARGUMENT	SYNTACTIC ROLE	DICTIONARY SERIAL NO
FORMAL	A02+00	FORMALIN-O	!	00	18	00K-0420	A000000 2 0	N-----		111 A PRED
IF	101+00	FSL-I	!	00	05	00K-0421	C			INF COMMA
IF IMPORTANT	V12+00	ZADAVA-T-SJA	!	00	17	00K-0422	C	FR		421K R CONJ
ONLY	101+00	TOL-K-U	!	00	14	00K-0423	C		P9	422 T PRED
ONLY	101+00	TOL-K-U	!	00	11	00K-0424	H		B0B4	INF ADVB
ELUCIDATION	N10+00	VYJASNENI-EM	!	00	11	00K-0425	W			423 OBJECT
MATHEMATICAL	A04+00	MAT-MATICHES K-U	!	00	14	00K-0426	A000000 0		R4	425 N COMP
PICTURE	N04+00	KARTIN-Y	!	00	18	00K-0427	ND12+000	-F-FFF-		426 N COMP
APPEARANCE	N10+00	JAVLENI-J	!	00	19	00K-0428	ND11+000	-G--N-A--		427 N COMP
PRECISE	A02+00	TOLCHN-U	!	00	22	00K-0429	C		R4	INF COMMA
AS THOUGH	101+00	TOLCHN-U	!	00	23	00K-0430	C			429K R CONJ
SC	101+00	TAK-	!	00	26	00K-0431	H			INF ADVB
(EMPHATIC)	101+00	ZM-F	!	00	26	00K-0432	H			430 V PRED
AFTER ALL	V01+00	PRUTEKA-JUT	!	00	26	00K-0433	W	00000TSAD0	B0B1B4B6	433 OBJECT
AND	101+00	-I	!	00	26	00K-0434	C			433 OBJECT
OTHER	A08+00	PRUG-IE	!	00	27	00K-0435	A0K1000 0	---N-A---		435 OBJECT
APPEARANCE	N10+00	JAVLENI-JA	!	00	30	00K-0436	ND11+000	---A---	R4	435 OBJECT
!		!	!	00	31	00K-0437				FND OF SENT.

# The Analysis of a Short-form Adjective-adverb Homograph and a Relative Conjunction-adverb Homograph

HINDSIGHT										INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
FORMAL	A02.00	FORMAL.N=0	00K-0420	A000000	0	N	-----	N	-----	INF ADVB			
..	..	..	00K-0421	..	..	..	-----	..	-----	INF CLAUSER			
..	..	..	00K-0421	..	..	..	-----	..	-----	INF CONJUNCT			
OF IMPORTANT	V12.00	ZAGAVA-T.SJA	00K-0423	VNR0P80000			FR			422 SUBJECT			
MATHEMATICAL	A04.00	MATHEMATICALS.N=0	00K-0426	A000000	0	-----	I	-----	F	425 AGENT			
..	..	..	00K-0429	..	..	..	-----	..	-----	INF CLAUSER			
..	..	..	00K-0429	..	..	..	-----	..	-----	INF CONJUNCT			
PREDICSE	A02.00	TECHN=0	00K-04301	A000000	0	N	-----	N	-----	INF ADVB			
AFTER ALL	101.00	ZH-F	00K-04328	..	..	..	-----	..	-----	INF ADVB			
ALSO	101.00	I	00K-04348	..	..	..	-----	..	-----	INF ADVB			
OTHER	004.00	NRUG-IE	00K-0435	NDK1000	0	-----	A	-----	A	433 OBJECT			
OTHER	A04.00	NRUG-IE	00K-0435	NDK1000	0	-----	N	-----	N	430 SUBJECT			
OTHER	A04.00	NRUG-IE	00K-0435	NDK1000	0	-----	N	-----	N	430 SUBJECT			
APPEARANCE	N14.00	JAVLENI-JA	00K-0436	NDK10000	0	-----	N	-----	N	43C SUBJECT			
PREDICTION:	WIPLD	430C12010X1A	00000000000	A01100000000			-----	-----	-----	43C			
PREDICTION	WIPLD	111012010X1A	NC000000000	NC1A00000000			-----	-----	-----				

Figure 42 (continued)

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		ALTERNATIVE	ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
			SERIAL NO.	WORD					
MATHEMATICS	N01.10	MATEMATIK-	\$ -01471	MD11M000	N-----	M-----		104711000000	
NOT	N04.10	MATEMATIK-	\$ -01472	MD11F100	N-----	G-----		104712000000	
WISH	V2A.00	WIL-	\$ -0148	WN	SSS---AMD-		P9 B3	110810000000	
WIFE	V2A.20	WIL-ET	\$ -0149	WN	INCOMPAT X		B184B5B6	211416071426	
WIFE	N01.00	WIVET-Y	\$ -0150	WN	-----N-A-	M-M---		016050000000	
WIFE	N01.00	WIVET-Y	\$ -0151	MD11M000				150650000000	
WIFE	N01.00	WIVET-Y	\$ -0152						
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
MATHEMATICS	N01.10	\$ -01471	MD11M000	N	III SUBJECT				
NOT	N04.10	\$ -01472	MD11F100	N	INF NEGATIVE				
WISH	V2A.00	\$ -0148	WN	SSS000AMD0	III V PRED				
(CORRESPONDENT)	V2A.20	\$ -0149	WN	FN	III V MAST				
WIFE	N01.00	\$ -0150	WN	-----A-	150 OBJECT				
WIFE	N01.00	\$ -0151	MD11M000	-----M---	END OF SENT.				
WIFE	N01.00	\$ -0152							
HINDSIGHT									
PREDICTION	WIPE	----	145012000650	0600000000	000 OBJECT				
					\$ -0152				

An Object of a Negated Verb  
Figure 43





UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS	RUSSIAN WORD MARKER (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
IT	NOT		P01.00 ON-A	\$ -0177	PN K STP 0	N-----F-----			126772000002
	WISH		101.00 N-E	\$ -0178	HN	N-----F-----			110810000000
	READ		V20.00 XOTFL-A	\$ -0179	VN OP5000*0	SSS---AFD-	P9 B3		211416071426
	BOOK		V01.00 CHITA-T	\$ -0180	VN OP7000*0	F-	808486		213802142855
	..		N04.10 KNIG-I	\$ -0181	ND11F000	-G---N-A---F-----F---			089150000000
	..			\$ -0182					
ANALYZED TEXT									
		CHAIN NO.	SIZE OF POOL						
IT	NOT	00 18	\$	-0177	PN K STP 0	N-----F-----			III SUBJECT
	WISH	00 09	\$	-0178	HN	N-----F-----			INF NEGATIVE
	READ	00 09	\$	-0179	VN OP5000*0	SSS000AFD0	P9 B3	N	III V PRED
	BOOK	00 06	\$	-0180	VN OP7000*0	F0	808486	N	179 V MAST
	..	00 07	\$	-0181	ND11F000	-G---A---F-----F---			III OBJECT
	..	00 10	\$	-0182					END OF SENT.
HINDSIGHT									
PREDICTION	WIPED	---	179012000650	06000000000	000	02JECT	\$	-0182	END OF SENT.

An Object of a Negated Verb with Case and Number Ambiguity  
Figure 45

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.	
FACE	NOT.00	CHITATEL--	00H-0114	NDALM000	N-----			213807142850	
NOT	101.00	N-E	00H-0115	HN				110810000000	
FACE	VIA.00	NAJD-EI	00H-0116	V500P300V0		P5 B2B4		112443165262	
FACE	101.00	-V	00H-0117	P		PAORONAB0650		000020000000	
COLLECTION	NOT.10	SPONIK-E	00H-0118	NDILM000				180115000000	
SYSTEMATIC	ADA.00	SYSTEMATICH SK-OGN	00H-0119	AD00000				184447142656	
ACCOUNT	NIA.00	IZLOZHENI-JA	00H-0120	NDILM000				075737500000	
THEORY	NOT.00	TEORI-I	00H-0121	NDILF000		P4		197170000000	
AND	101.00	-I	00H-0122	C				0000P0000000	
AND	101.00	-I	00H-0123	M				0000P5000000	
TECHNICAL	NOT.10	TEANIK-I	00H-0124	NDALM000				197710000000	
TECHNOLOGY	NOT.10	TEANIK-I	00H-0125	NDILF100				197720000000	
STRIP	ADA.00	POLOSKOV-YX	00H-0126	AD00000				150576666666	
LINE	NOT.00	LIN-IU	00H-0127	NDILF000				100110000000	
..									
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
FACE	00 18	00H-0124	NDALM000	III SUBJECT					
NOT	00 09	00H-0125	HN	INF NEGATIVE					
FACE	00 09	00H-0126	V500P300V0	III V PREP					
FACE	00 07	00H-0117	P	INF PREP					
COLLECTION	00 10	00H-0118	NDILM000	137 R COMP					
SYSTEMATIC	00 13	00H-0119	AD00000	138 N COMP					
ACCOUNT	00 17	00H-0120	NDILM000	139 N COMPM					
THEORY	00 19	00H-0121	NDILF000	140 N COMP					
AND	00 21	00H-0122	C	INF CONJUNCT					
AND	00 21	00H-0123	M	141C N COMP					
TECHNOLOGY	00 23	00H-0124	AD00000	143 N COMP					
STRIP	00 27	00H-0125	NDILF000	144 N COMPM					
LINE	00 27	00H-0126		END OF SENT.					
..									
HINDSIGHT									
	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE							
SYSTEMATIC	00H-0119	AD00000	0	-GA-----	-BM-----			136 OBJECT	
ACCOUNT	00H-0120	NDILM000	0	-G-----	-N-----			136 OBJECT	
THEORY	00H-0121	NDILF000	0	-G-----	-F-----			136 OBJECT	
AND	00H-0122	C	0	-G-----	-F-----			136 OBJECT	
AND	00H-0123	M	0	-G-----	-F-----			136 OBJECT	
TECHNOLOGY	00H-0124	AD00000	0	-G-----	-F-----			136 OBJECT	
TECHNOLOGY	00H-0125	NDILF000	0	-G-----	-F-----			136 OBJECT	
STRIP	00H-0126		0	-G-----	-F-----			136 OBJECT	
LINE	00H-0127		0	-G-----	-F-----			136 OBJECT	
PREDICTION	00H-0128		0	-G-----	-F-----			136 OBJECT	
..									

An Analysis with Object-noun Complement Ambiguity  
Figure 46

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
			SERIAL NO.	WORD					
AF	P01.00	M-Y	CUU-0300	PN A PVP	0	-----N-----		10231333338	
AFND	V04.00	MAAD-IM	CUU-0301	VN00P30000		---V---BAD-	F5 B1B4	115800270270	
AFGLV	I01.00	VESAM-A	CUU-0302	M		-----N-----		014040000000	
AFMP.F	A03.00	PROST-U	CUU-0303	AP00000 0	0	N-----	P4	104170000000	
AFPRESSION	M10.00	VYRAZHENI-E	CUU-0304	MDI1N000		N-A-----	P4	036050000000	
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE	
AF	00 18	00U-0300	PN A PVP	0	-----N-----			111	SUBJECT
AFND	00 09	00U-0301	VN00P30000		000V00B00	E5 B1B4		111	V PRED
AFGLV	00 06	00U-0302	M		N-----			11F	ADVB
AFMP.F	00 06	00U-0303	AP00000 0	0	N-----			11F	ADVB
AFPRESSION	00 08	00U-0304	MDI1N000		--A-----			101	OBJECT

A "Subject - Predicate - Object" Clause

Figure 47

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.	
PRACTICAL	AOA.00	PRAKTICHESK- OE	00H-0368	AD000000	N-A-----			194371666666	
REALIZATION	NIA.00	OSUSHCHFSTVL ENI-E	00H-0369	ND11N000	N-A-----	P4		130345000000	
STRIP	AOA.00	POLSKOV-YX	00H-0370	AD000000	GA-P-----			150546666666	
NOT	NOI.20	UZ-UV	00H-0371	ND11N000	-----AA--A			2028P0000000	
DIFFER	VOI.00	UTLCHA-ETSJ A	00H-0372	VNR0P0000	-----M-----			152347500000	
LARGE	AOA.00	BOLSH-CJ	00H-0373	AD010000	NGACIP-----	BOB184B6		009100000000	
SIMPLICITY	NOA.00	PROSTOT-CJ	00H-0374	ND12F100	-----F-----			1841P0000000	
ANALYZED TEXT									
			CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT			SYNTACTIC ROLE	
PRACTICAL	AOA.00	PRAKTICHESK- OE	00	20	00H-0368	AD000000	0	N-----	367 SUBJECT
REALIZATION	NIA.00	OSUSHCHFSTVL ENI-E	00	23	00H-0369	ND11N000	0	N-----	368 SUBJECT
STRIP	AOA.00	POLSKOV-YX	00	24	00H-0370	AD000000	0	N-----	369 N COMP
NOT	NOI.20	UZ-UV	00	28	00H-0371	ND11N000	0	N-----	370 N COMP
DIFFER	VOI.00	UTLCHA-ETSJ A	00	28	00H-0372	VNR0P0000	0	N-----	371 V PRED
LARGE	AOA.00	BOLSH-CJ	00	17	00H-0373	AD010000	0	N-----	372 OBJECT
SIMPLICITY	NOA.00	PROSTOT-CJ	00	20	00H-0374	ND12F100	0	N-----	373 OBJECT
HINDSIGHT									
					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE	
PRACTICAL	AOA.00	PRAKTICHESK- OE			00H-0368	AD000000	0	--A-----	367 L OBJ
REALIZATION	NIA.00	OSUSHCHFSTVL ENI-E			00H-0369	ND11N000	0	--A-----	367 L OBJ
STRIP	AOA.00	POLSKOV-YX			00H-0370	AD000000	0	--A-----	367 L OBJ
LARGE	AOA.00	BOLSH-CJ			00H-0373	AD010000	0	--C-----	367 IND OBJ

A "Subject - Predicate - Object" Clause  
Figure 48

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE	ARGUMENTS	SEMI ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
WIFE	VIB-00	ЖЕНА	CUJ-0518	VS00000000	F-		B0R4B4		045010000000
POSSIBILITY	NOA-00	ВООЗМОЖНОСТЬ	CUJ-0519	PF115000	N-A		P209		021500416665
CHECK	VOU-01	ПРОВЕРИТЬ	CUJ-0520	VS 0030000	F-		B0B6		160900000000
ANAL	POI-00	УСЛ	CUJ-0521	PK K ATF 0	N-A				027450000000
TRUST	POI-00	УСЛ	CUJ-0522	PK K ATF 0	N-A				218919583332
CONSPIRACY	NLO-00	ЗАКЛЮЧЕНИЕ	CUJ-0523	PF114000	N-A		P4		062800000000
ANALYSIS	NOA-00	АНАЛИЗ	CUJ-0524	PF114000	N-A				002500000000
TRUST	POI-00	УСЛ	CUJ-0525	PF114000	N-A				193005000000
TRUST	POI-00	УСЛ	CUJ-0526	PF114000	N-A				000000000000
TRUST	POI-00	УСЛ	CUJ-0527	PF114000	N-A				000000000000
TRUST	POI-00	УСЛ	CUJ-0528	PF114000	N-A				184170000000
TRUST	POI-00	УСЛ	CUJ-0529	PF114000	N-A				055300000000
TRUST	POI-00	УСЛ	CUJ-0530	PF114000	N-A				051970000000
TRUST	POI-00	УСЛ	CUJ-0531	PF114000	N-A				009050000000
TRUST	POI-00	УСЛ	CUJ-0532	PF114000	N-A				212800000000
TRUST	POI-00	УСЛ	CUJ-0533	PF114000	N-A				207300000000
TRUST	POI-00	УСЛ	CUJ-0534	PF114000	N-A				056510000000
TRUST	POI-00	УСЛ	CUJ-0535	PF114000	N-A				001100000000
TRUST	POI-00	УСЛ	CUJ-0536	PF114000	N-A				214020000000
TRUST	POI-00	УСЛ	CUJ-0537	PF114000	N-A				000020000000
TRUST	POI-00	УСЛ	CUJ-0538	PF114000	N-A				190300000000
TRUST	POI-00	УСЛ	CUJ-0539	PF114000	N-A				218300000000
TRUST	POI-00	УСЛ	CUJ-0540	PF114000	N-A				075730000000
TRUST	POI-00	УСЛ	CUJ-0541	PF114000	N-A				197170000000
TRUST	POI-00	УСЛ	CUJ-0542	PF114000	N-A				013500000000
TRUST	POI-00	УСЛ	CUJ-0543	PF114000	N-A				
TRUST	POI-00	УСЛ	CUJ-0544	PF114000	N-A				

A Clause with an Infinitive Verb Subject  
Figure 49

SYNTACTIC ROLE	ANALYZED TEXT			SYNTACTIC ROLE
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	
111 SUBJECT	111	111	111	111
518 SUBJECT	518	518	518	518
519 V MAST	519	519	519	519
520 OBJECT	520	520	520	520
521 OBJECTM	521	521	521	521
522 OBJECTM	522	522	522	522
523 AGENT	523	523	523	523
519 OBJECT	519	519	519	519
INF CONJUNCT	INF	INF	INF	INF
525 OBJECTM	525	525	525	525
INF COMMA	INF	INF	INF	INF
527 OBJECTM	527	527	527	527
INF PREP	INF	INF	INF	INF
530 R COMP	530	530	530	530
531 R COMP	531	531	531	531
532 N COMP	532	532	532	532
INF COMMA	INF	INF	INF	INF
111 V PRED	111	111	111	111
535 OBJECT	535	535	535	535
536 OBJECTM	536	536	536	536
INF PREP	INF	INF	INF	INF
538 R COMP	538	538	538	538
539 R COMP	539	539	539	539
540 N COMP	540	540	540	540
541 N COMP	541	541	541	541
542 N COMP	542	542	542	542
543 N COMP	543	543	543	543
544 N COMP	544	544	544	544

Figure 49 (continued)

Figure 49 (continued)

An "Object - Predicate - Subject" Clause

An "Object - Predicate - Subject" Clause



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD	TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	DICTIONARY SERIAL NO	
1. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA			04500000000	
2. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH			13000000000	
3. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY			19200000000	
4. PREPOSITION	P	НА	NA	0000000	NA			19710000000	
5. CONJUNCTION	C	И	I	0000000	I			05100000000	
6. PARTICLE	PT	НЕ	NE	0000000	NE				
7. INTERJECTION	INT	О	O	0000000	O				
8. ADVERB	ADV	ОЧЕНЬ	OCHEN	0000000	OCHEN				
9. PRONOUN	PR	ОНА	ONA	0000000	ONA				
10. NUMERAL	NUM	ОДИН	ODIN	0000000	ODIN				
11. PARTICLE	PT	НЕ	NE	0000000	NE				
12. CONJUNCTION	C	И	I	0000000	I				
13. PREPOSITION	P	НА	NA	0000000	NA				
14. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
15. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
16. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
17. PARTICLE	PT	НЕ	NE	0000000	NE				
18. CONJUNCTION	C	И	I	0000000	I				
19. PREPOSITION	P	НА	NA	0000000	NA				
20. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
21. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
22. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
23. PARTICLE	PT	НЕ	NE	0000000	NE				
24. CONJUNCTION	C	И	I	0000000	I				
25. PREPOSITION	P	НА	NA	0000000	NA				
26. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
27. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
28. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
29. PARTICLE	PT	НЕ	NE	0000000	NE				
30. CONJUNCTION	C	И	I	0000000	I				
31. PREPOSITION	P	НА	NA	0000000	NA				
32. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
33. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
34. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
35. PARTICLE	PT	НЕ	NE	0000000	NE				
36. CONJUNCTION	C	И	I	0000000	I				
37. PREPOSITION	P	НА	NA	0000000	NA				
38. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
39. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
40. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
41. PARTICLE	PT	НЕ	NE	0000000	NE				
42. CONJUNCTION	C	И	I	0000000	I				
43. PREPOSITION	P	НА	NA	0000000	NA				
44. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
45. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
46. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
47. PARTICLE	PT	НЕ	NE	0000000	NE				
48. CONJUNCTION	C	И	I	0000000	I				
49. PREPOSITION	P	НА	NA	0000000	NA				
50. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
51. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
52. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
53. PARTICLE	PT	НЕ	NE	0000000	NE				
54. CONJUNCTION	C	И	I	0000000	I				
55. PREPOSITION	P	НА	NA	0000000	NA				
56. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
57. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
58. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
59. PARTICLE	PT	НЕ	NE	0000000	NE				
60. CONJUNCTION	C	И	I	0000000	I				
61. PREPOSITION	P	НА	NA	0000000	NA				
62. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
63. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
64. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
65. PARTICLE	PT	НЕ	NE	0000000	NE				
66. CONJUNCTION	C	И	I	0000000	I				
67. PREPOSITION	P	НА	NA	0000000	NA				
68. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
69. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
70. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
71. PARTICLE	PT	НЕ	NE	0000000	NE				
72. CONJUNCTION	C	И	I	0000000	I				
73. PREPOSITION	P	НА	NA	0000000	NA				
74. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
75. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
76. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
77. PARTICLE	PT	НЕ	NE	0000000	NE				
78. CONJUNCTION	C	И	I	0000000	I				
79. PREPOSITION	P	НА	NA	0000000	NA				
80. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
81. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
82. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
83. PARTICLE	PT	НЕ	NE	0000000	NE				
84. CONJUNCTION	C	И	I	0000000	I				
85. PREPOSITION	P	НА	NA	0000000	NA				
86. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
87. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
88. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
89. PARTICLE	PT	НЕ	NE	0000000	NE				
90. CONJUNCTION	C	И	I	0000000	I				
91. PREPOSITION	P	НА	NA	0000000	NA				
92. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
93. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
94. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
95. PARTICLE	PT	НЕ	NE	0000000	NE				
96. CONJUNCTION	C	И	I	0000000	I				
97. PREPOSITION	P	НА	NA	0000000	NA				
98. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
99. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
100. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
101. PARTICLE	PT	НЕ	NE	0000000	NE				
102. CONJUNCTION	C	И	I	0000000	I				
103. PREPOSITION	P	НА	NA	0000000	NA				
104. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
105. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
106. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
107. PARTICLE	PT	НЕ	NE	0000000	NE				
108. CONJUNCTION	C	И	I	0000000	I				
109. PREPOSITION	P	НА	NA	0000000	NA				
110. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
111. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
112. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
113. PARTICLE	PT	НЕ	NE	0000000	NE				
114. CONJUNCTION	C	И	I	0000000	I				
115. PREPOSITION	P	НА	NA	0000000	NA				
116. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
117. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
118. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
119. PARTICLE	PT	НЕ	NE	0000000	NE				
120. CONJUNCTION	C	И	I	0000000	I				
121. PREPOSITION	P	НА	NA	0000000	NA				
122. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
123. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
124. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
125. PARTICLE	PT	НЕ	NE	0000000	NE				
126. CONJUNCTION	C	И	I	0000000	I				
127. PREPOSITION	P	НА	NA	0000000	NA				
128. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
129. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
130. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
131. PARTICLE	PT	НЕ	NE	0000000	NE				
132. CONJUNCTION	C	И	I	0000000	I				
133. PREPOSITION	P	НА	NA	0000000	NA				
134. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
135. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
136. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
137. PARTICLE	PT	НЕ	NE	0000000	NE				
138. CONJUNCTION	C	И	I	0000000	I				
139. PREPOSITION	P	НА	NA	0000000	NA				
140. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
141. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
142. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
143. PARTICLE	PT	НЕ	NE	0000000	NE				
144. CONJUNCTION	C	И	I	0000000	I				
145. PREPOSITION	P	НА	NA	0000000	NA				
146. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
147. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
148. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
149. PARTICLE	PT	НЕ	NE	0000000	NE				
150. CONJUNCTION	C	И	I	0000000	I				
151. PREPOSITION	P	НА	NA	0000000	NA				
152. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
153. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
154. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
155. PARTICLE	PT	НЕ	NE	0000000	NE				
156. CONJUNCTION	C	И	I	0000000	I				
157. PREPOSITION	P	НА	NA	0000000	NA				
158. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
159. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
160. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
161. PARTICLE	PT	НЕ	NE	0000000	NE				
162. CONJUNCTION	C	И	I	0000000	I				
163. PREPOSITION	P	НА	NA	0000000	NA				
164. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
165. VERB	V	ЕХАЛ	EH-AH	0000000	EH-AH				
166. NOUN	N	МАШИНА	MA-SHI-NA	0000000	MA-SHI-NA				
167. PARTICLE	PT	НЕ	NE	0000000	NE				
168. CONJUNCTION	C	И	I	0000000	I				
169. PREPOSITION	P	НА	NA	0000000	NA				
170. ADJECTIVE	A	СВОЙ	SVOY	0000000	SVOY				
171. VERB	V	ЕХАЛ	EH-A						

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
... ..	A00000	... ..	000000	0	---	---	193700000000		
... ..	A00000	... ..	000000	0	---	---	214500000000		
... ..	A00000	... ..	000000	0	---	---	131500000000		
... ..	A00000	... ..	000000	0	---	---	150500000000		
... ..	A00000	... ..	000000	0	---	---	09507850183		
... ..	A00000	... ..	000000	0	---	---	045070000000		
... ..	A00000	... ..	000000	0	---	---	209500000000		
... ..	A00000	... ..	000000	0	---	---	102313333338		
... ..	A00000	... ..	000000	0	---	---	010210000000		
... ..	A00000	... ..	000000	0	---	---	112700000000		
... ..	A00000	... ..	000000	0	---	---	214500000000		
... ..	A00000	... ..	000000	0	---	---	150500000000		
... ..	A00000	... ..	000000	0	---	---	163300000000		
... ..	A00000	... ..	000000	0	---	---	051570000000		
... ..	A00000	... ..	000000	0	---	---	215870000000		
ANALYZED TEXT									
CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE						
00 1A	000000	---	111 L OBJ						
00 00	000000	---	071 L OBJ M						
00 00	000000	---	072 N COMP						
00 1A	000000	---	073 N COMP						
00 1A	000000	---	INF COMMA						
00 2A	000000	---	076K SUBJECT						
00 2C	000000	---	076 V PRED						
00 1A	000000	---	077 AGENT						
00 1A	000000	---	INF \$\$\$						
00 1A	000000	---	INF COMMA						
00 25	000000	---	111 SUBJECT						
00 07	000000	---	111 V PRED						
00 05	000000	---	082 V MAST						
00 0P	000000	---	083 OBJCT						
00 00	000000	---	084 N COMP						
00 12	000000	---	085 N COMP						
00 1A	000000	---	INF REP						
00 1A	000000	---	087 R COMP						

A Clause with Two Objects  
Figure 52

HINDSIGHT		INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
..	..	00A-0975	..	INF CLAUSER
..	..	00A-0976	..	INF CONJUNCT
..	..	00A-0977	..	976K SUBJECT
..	..	00A-0978	..	111K SUBJECT
..	..	00A-0979	..	111K SUBJECT
..	..	00A-0980	..	INF CLAUSER
..	..	00A-0981	..	INF CONJUNCT
..	..	00A-0982	..	INF CLAUSER
..	..	00A-0983	..	INF CONJUNCT
..	..	00A-0984	..	INF CLAUSER
..	..	00A-0985	..	INF CONJUNCT
..	..	00A-0986	..	INF CLAUSER
..	..	00A-0987	..	INF CONJUNCT
..	..	00A-0988	..	INF CLAUSER
..	..	00A-0989	..	INF CONJUNCT
..	..	00A-0990	..	INF CLAUSER
..	..	00A-0991	..	INF CONJUNCT
..	..	00A-0992	..	INF CLAUSER
..	..	00A-0993	..	INF CONJUNCT
..	..	00A-0994	..	INF CLAUSER
..	..	00A-0995	..	INF CONJUNCT
..	..	00A-0996	..	INF CLAUSER
..	..	00A-0997	..	INF CONJUNCT
..	..	00A-0998	..	INF CLAUSER
..	..	00A-0999	..	INF CONJUNCT

Figure 52 (continued)

UNANALYZED TEXT									
ENGLISH	RUSSIAN WORD	TEXT	ORGANIZED	ALTERNATIVE	ARGUMENTS	3rd	DICTIONARY		
NUMBER	TRANSLITERATED	SERIAL NO.	WORD			WORD	SERIAL NO.		
0000000000	АНА	004-0169	ADDOO00	0	N		00005000000		
0000000000	АНА	004-0169	ADDOO00	0	N		00010000000		
0000000000	АНА	004-0170	ADDOO00	0	N		21284000000		
0000000000	АНА	004-0171	ADDOO00	0	N		19205666666		
0000000000	АНА	004-0172	ADDOO00	130	N		192448421040		
0000000000	АНА	004-0173	ADDOO00	0	N		127082820510		
0000000000	АНА	004-0174	ADDOO00	0	N		17086000000		
0000000000	АНА	004-0175	ADDOO00	0	N		03736000000		
0000000000	АНА	004-0176	ADDOO00	0	N		20285000000		
ANALYZED TEXT									
CHAIN NO	SIZE OF	SYNTACTIC	PREFERRED	ARGUMENT	ROLE				
	POOL	ROLE							
00 18	004-0169	ADDOO00	0	N					
00 10	004-0170	ADDOO00	1	N					
00 11	004-0171	ADDOO00	1	N					
00 14	004-0172	ADDOO00	130	N					
00 07	004-0173	ADDOO00	0	N					
00 11	004-0174	ADDOO00	0	N					
00 15	004-0175	ADDOO00	0	N					
00 14	004-0176	ADDOO00	0	N					
HINDSIGHT									
ALTERNATIVE	INTERSECTING	ARGUMENTS	ROLE						
004-0169	ADDOO00	0	N						
004-0170	ADDOO00	1	N						
004-0173	ADDOO00	0	N						
004-0174	ADDOO00	0	N						
004-0175	ADDOO00	0	N						
004-0176	ADDOO00	0	N						
004-0169	ADDOO00	0	N						
004-0170	ADDOO00	1	N						
004-0173	ADDOO00	0	N						
004-0174	ADDOO00	0	N						
004-0175	ADDOO00	0	N						
004-0176	ADDOO00	0	N						

A Clause with a Short-form Adjective Predicate Head  
Figure 53

UNANALYZED TEXT				ANALYZED TEXT			
CLASS MARKER	RUSSIAN WORD	TEXT SERIAL NO	ORGANIZED WORD	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
1	НЕТ	000-0762	0	1	000-0762	0	00000100100
2	ВАС	000-0763	0	2	000-0763	0	00000100100
3	ВАС	000-0764	0	3	000-0764	0	00000100100
4	ВАС	000-0765	0	4	000-0765	0	00000100100
5	ВАС	000-0766	0	5	000-0766	0	00000100100
6	ВАС	000-0767	0	6	000-0767	0	00000100100
7	ВАС	000-0768	0	7	000-0768	0	00000100100
8	ВАС	000-0769	0	8	000-0769	0	00000100100
9	ВАС	000-0770	0	9	000-0770	0	00000100100
10	ВАС	000-0771	0	10	000-0771	0	00000100100
11	ВАС	000-0772	0	11	000-0772	0	00000100100
12	ВАС	000-0773	0	12	000-0773	0	00000100100
13	ВАС	000-0774	0	13	000-0774	0	00000100100
14	ВАС	000-0775	0	14	000-0775	0	00000100100
15	ВАС	000-0776	0	15	000-0776	0	00000100100
16	ВАС	000-0777	0	16	000-0777	0	00000100100
17	ВАС	000-0778	0	17	000-0778	0	00000100100
18	ВАС	000-0779	0	18	000-0779	0	00000100100
19	ВАС	000-0780	0	19	000-0780	0	00000100100
20	ВАС	000-0781	0	20	000-0781	0	00000100100
21	ВАС	000-0782	0	21	000-0782	0	00000100100
22	ВАС	000-0783	0	22	000-0783	0	00000100100
23	ВАС	000-0784	0	23	000-0784	0	00000100100
24	ВАС	000-0785	0	24	000-0785	0	00000100100
25	ВАС	000-0786	0	25	000-0786	0	00000100100
26	ВАС	000-0787	0	26	000-0787	0	00000100100
27	ВАС	000-0788	0	27	000-0788	0	00000100100
28	ВАС	000-0789	0	28	000-0789	0	00000100100
29	ВАС	000-0790	0	29	000-0790	0	00000100100
30	ВАС	000-0791	0	30	000-0791	0	00000100100
31	ВАС	000-0792	0	31	000-0792	0	00000100100
32	ВАС	000-0793	0	32	000-0793	0	00000100100
33	ВАС	000-0794	0	33	000-0794	0	00000100100
34	ВАС	000-0795	0	34	000-0795	0	00000100100
35	ВАС	000-0796	0	35	000-0796	0	00000100100
36	ВАС	000-0797	0	36	000-0797	0	00000100100
37	ВАС	000-0798	0	37	000-0798	0	00000100100
38	ВАС	000-0799	0	38	000-0799	0	00000100100
39	ВАС	000-0800	0	39	000-0800	0	00000100100
40	ВАС	000-0801	0	40	000-0801	0	00000100100
41	ВАС	000-0802	0	41	000-0802	0	00000100100
42	ВАС	000-0803	0	42	000-0803	0	00000100100
43	ВАС	000-0804	0	43	000-0804	0	00000100100
44	ВАС	000-0805	0	44	000-0805	0	00000100100
45	ВАС	000-0806	0	45	000-0806	0	00000100100
46	ВАС	000-0807	0	46	000-0807	0	00000100100
47	ВАС	000-0808	0	47	000-0808	0	00000100100
48	ВАС	000-0809	0	48	000-0809	0	00000100100
49	ВАС	000-0810	0	49	000-0810	0	00000100100
50	ВАС	000-0811	0	50	000-0811	0	00000100100
51	ВАС	000-0812	0	51	000-0812	0	00000100100
52	ВАС	000-0813	0	52	000-0813	0	00000100100
53	ВАС	000-0814	0	53	000-0814	0	00000100100
54	ВАС	000-0815	0	54	000-0815	0	00000100100
55	ВАС	000-0816	0	55	000-0816	0	00000100100
56	ВАС	000-0817	0	56	000-0817	0	00000100100
57	ВАС	000-0818	0	57	000-0818	0	00000100100
58	ВАС	000-0819	0	58	000-0819	0	00000100100
59	ВАС	000-0820	0	59	000-0820	0	00000100100
60	ВАС	000-0821	0	60	000-0821	0	00000100100
61	ВАС	000-0822	0	61	000-0822	0	00000100100
62	ВАС	000-0823	0	62	000-0823	0	00000100100
63	ВАС	000-0824	0	63	000-0824	0	00000100100
64	ВАС	000-0825	0	64	000-0825	0	00000100100
65	ВАС	000-0826	0	65	000-0826	0	00000100100
66	ВАС	000-0827	0	66	000-0827	0	00000100100
67	ВАС	000-0828	0	67	000-0828	0	00000100100
68	ВАС	000-0829	0	68	000-0829	0	00000100100
69	ВАС	000-0830	0	69	000-0830	0	00000100100
70	ВАС	000-0831	0	70	000-0831	0	00000100100
71	ВАС	000-0832	0	71	000-0832	0	00000100100
72	ВАС	000-0833	0	72	000-0833	0	00000100100
73	ВАС	000-0834	0	73	000-0834	0	00000100100
74	ВАС	000-0835	0	74	000-0835	0	00000100100
75	ВАС	000-0836	0	75	000-0836	0	00000100100
76	ВАС	000-0837	0	76	000-0837	0	00000100100
77	ВАС	000-0838	0	77	000-0838	0	00000100100
78	ВАС	000-0839	0	78	000-0839	0	00000100100
79	ВАС	000-0840	0	79	000-0840	0	00000100100
80	ВАС	000-0841	0	80	000-0841	0	00000100100
81	ВАС	000-0842	0	81	000-0842	0	00000100100
82	ВАС	000-0843	0	82	000-0843	0	00000100100
83	ВАС	000-0844	0	83	000-0844	0	00000100100
84	ВАС	000-0845	0	84	000-0845	0	00000100100
85	ВАС	000-0846	0	85	000-0846	0	00000100100
86	ВАС	000-0847	0	86	000-0847	0	00000100100
87	ВАС	000-0848	0	87	000-0848	0	00000100100
88	ВАС	000-0849	0	88	000-0849	0	00000100100
89	ВАС	000-0850	0	89	000-0850	0	00000100100
90	ВАС	000-0851	0	90	000-0851	0	00000100100
91	ВАС	000-0852	0	91	000-0852	0	00000100100
92	ВАС	000-0853	0	92	000-0853	0	00000100100
93	ВАС	000-0854	0	93	000-0854	0	00000100100
94	ВАС	000-0855	0	94	000-0855	0	00000100100
95	ВАС	000-0856	0	95	000-0856	0	00000100100
96	ВАС	000-0857	0	96	000-0857	0	00000100100
97	ВАС	000-0858	0	97	000-0858	0	00000100100
98	ВАС	000-0859	0	98	000-0859	0	00000100100
99	ВАС	000-0860	0	99	000-0860	0	00000100100
100	ВАС	000-0861	0	100	000-0861	0	00000100100
101	ВАС	000-0862	0	101	000-0862	0	00000100100
102	ВАС	000-0863	0	102	000-0863	0	00000100100
103	ВАС	000-0864	0	103	000-0864	0	00000100100
104	ВАС	000-0865	0	104	000-0865	0	00000100100
105	ВАС	000-0866	0	105	000-0866	0	00000100100
106	ВАС	000-0867	0	106	000-0867	0	00000100100
107	ВАС	000-0868	0	107	000-0868	0	00000100100
108	ВАС	000-0869	0	108	000-0869	0	00000100100
109	ВАС	000-0870	0	109	000-0870	0	00000100100
110	ВАС	000-0871	0	110	000-0871	0	00000100100
111	ВАС	000-0872	0	111	000-0872	0	00000100100
112	ВАС	000-0873	0	112	000-0873	0	00000100100
113	ВАС	000-0874	0	113	000-0874	0	00000100100
114	ВАС	000-0875	0	114	000-0875	0	00000100100
115	ВАС	000-0876	0	115	000-0876	0	00000100100
116	ВАС	000-0877	0	116	000-0877	0	00000100100
117	ВАС	000-0878	0	117	000-0878	0	00000100100
118	ВАС	000-0879	0	118	000-0879	0	00000100100
119	ВАС	000-0880	0	119	000-0880	0	00000100100
120	ВАС	000-0881	0	120	000-0881	0	00000100100
121	ВАС	000-0882	0	121	000-0882	0	00000100100
122	ВАС	000-0883	0	122	000-0883	0	00000100100
123	ВАС	000-0884	0	123	000-0884	0	00000100100
124	ВАС	000-0885	0	124	000-0885	0	00000100100
125	ВАС	000-0886	0	125	000-0886	0	00000100100
126	ВАС	000-0887	0	126	000-0887	0	00000100100
127	ВАС	000-0888	0	127	000-0888	0	00000100100
128	ВАС	000-0889	0	128	000-0889	0	00000100100
129	ВАС	000-0890	0	129	000-0890	0	00000100100
130	ВАС	000-0891	0	130	000-0891	0	00000100100
131	ВАС	000-0892	0	131	000-0892	0	00000100100
132	ВАС	000-0893	0	132	000-0893	0	00000100100
133	ВАС	000-0894	0	133	000-0894	0	00000100100
134	ВАС	000-0895	0	134	000-0895	0	00000100100
135	ВАС	000-0896	0	135	000-0896	0	00000100100
136	ВАС	000-0897	0	136	000-0897	0	00000100100
137	ВАС	000-0898	0	137	000-0898	0	00000100100
138	ВАС	000-0899	0	138	000-0899	0	00000100100
139	ВАС	000-0900	0	139	000-0900	0	00000100100
140	ВАС	000-0901	0	140	000-0901	0	00000100100
141	ВАС	000-0902	0	141	000-0902	0	00000100100
142	ВАС	000-0903	0	142	000-0903	0	00000100100
143	ВАС	000-0904	0	143	000-0904	0	00000100100
144	ВАС	000-0905	0	144	000-0905	0	00000100100
145	ВАС	000-0906	0	145	000-0906	0	00000100100
146	ВАС	000-0907	0	146	000-0907	0	00000100100
147	ВАС	000-0908	0	147	000-0908	0	00000100100
148	ВАС	000-0909	0	148	000-0909	0	00000100100
149	ВАС	000-0910	0	149	000-0910	0	00000100100
150	ВАС	000-0911	0	150	000-0911	0	00000100100
151	ВАС	000-0912	0	151	000-0912	0	00000100100
152	ВАС	000-0913	0	152	000-0913	0	00000100100
153	ВАС	000-0914	0	153	000-0914	0	00000100100
154	ВАС	000-0915	0	154	000-0915	0	00000100100
155	ВАС	00					

Figure 54

[illegible]

Figure 54 (continued)

UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIOrganized WORD	3rd	DICTONARY SERIAL NO.
1	101	101	0048	0	---	PAORONAB0650		0000200000000
2	102	102	0049	1	---			195110185183
3	103	103	0050	2	---			195108146147
4	104	104	0051	3	---			1951061111111
5	105	105	0052	4	---			0270000000000
6	106	106	0053	5	---			085242338360
7	107	107	0054	6	---			0852400000000
8	108	108	0055	7	---			2083050000000
9	109	109	0056	8	---			2083075000001
10	110	110	0057	9	---			0000500000000
11	111	111	0058	10	---			0000500000000
12	112	112	0059	11	---			1977100000000
13	113	113	0060	12	---			1977200000000
14	114	114	0061	13	---			0803100000000
15	115	115	0062	14	---			0781000000000
16	116	116	0063	15	---			1649700000000

ANALYZED TEXT

CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
00 14	0048-0049	PA 1 STD 0	INF PREP
00 14	0049-0050	PA 1 STD 0	048 R COMP
00 24	0050-0051	PA 1 STD 0	049 R COMP
00 24	0051-0052	PA 1 STD 0	1100 R CONJ
00 14	0052-0053	PA 1 STD 0	051 SUBJECT
00 14	0053-0054	PA 1 STD 0	INF CONJUNCT
00 14	0054-0055	PA 1 STD 0	052C SUBJECT
00 15	0055-0056	PA 1 STD 0	INF ARBITR
00 15	0056-0057	PA 1 STD 0	055 OBJECT
00 14	0057-0058	PA 1 STD 0	056 N COMP

HINDSIGHT

INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
---	048 R COMP
---	INF ADVB
---	1100 R CONJ
---	111 SUBJECT
---	111 SUBJECT
---	111 L OBJ
---	111 L OBJ
---	111 SUBJECT
---	111 L OBJ
---	111 L OBJ
---	111 L OBJ
---	051 L OBJ
---	INF ADVB
---	051 L OBJ
---	051 L OBJ
---	051 L OBJ
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An Analysis with Subject-object Ambiguity

# UNANALYZED TEXT

CLASS	RUSSIAN WORD	TEXT	ORGANIZED	3rd	DICTIONARY
NUMBER	TRANSLITERATED	SERIAL NO.	WORD	WORD	SERIAL NO.
1	ВНЕШНЕ	000-010	VS UP30000	B006	109'000000
2	ВНЕШНЕ	000-010	VS UP30000	IAPOROBG0680	057'000000
3	ВНЕШНЕ	000-010	VS UP30000	P0	054'000000
4	ВНЕШНЕ	000-010	VS UP30000		054'5129304
5	ВНЕШНЕ	000-010	VS UP30000		110049285710

## ANALYZED TEXT

CHAIN NO	SIZE OF POOL	SYNTACTIC ROLE
01	01	134 V MAST
02	01	137 R COMP
03	01	138 N COMP
04	01	139 N COMP

## HINDSIGHT

INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
000-010	138 N COMP
000-010	138 AGENT
000-010	138 AGENT
000-010	136 OBJECT
000-010	136 OBJECT
000-010	132 INC OBJ
000-010	132 INC OBJ
000-010	136 OBJECT

An Analysis with an Optional Object Prediction

Figure 56



UNANALYZED TEXT							
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
PRECISE	A02.00	TOLHN-U	00K-04301	AD00000 2 0	N-----		198720000000
AFTER ALL	101.00	TOLHN-U	00K-04302	C			198715000000
ALSO	101.00	TAK-	00K-04303	M			195230000000
OTHER	101.00	ZH-F	00K-04304	M			056590000000
OTHER	101.00	ZH-F	00K-04305	M			056590000000
OTHER	101.00	PRUG-EA-JUT	00K-04306	VN 3000000	-----TBAD-	B0B1B0B6	164263333333
OTHER	101.00	-I	00K-04307	M			000080000000
OTHER	101.00	-I	00K-04308	M			000080000000
OTHER	101.00	PRUG-IE	00K-04309	MD10000	-G-----N-A-		057900000000
OTHER	101.00	JAVLENI-JA	00K-04310	MD10000	-----N-N-	P4	212600000000
ANALYZED TEXT							
	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		
PRECISE	00	33	00K-04301	C			
AFTER ALL	00	24	00K-04302	M			
ALSO	00	26	00K-04303	M			
OTHER	00	26	00K-04304	M			
OTHER	00	26	00K-04305	C	00000TBAD0		B0B1B0B6
OTHER	00	27	00K-04306	C	-----A-		
OTHER	00	27	00K-04307	C	-----A-		
OTHER	00	30	00K-04308	C	-----A-		
OTHER	00	30	00K-04309	C	-----N-N-	R4	
OTHER	00	30	00K-04310	C	-----N-N-		
HINDSIGHT							
	CHAIN NO	SIZE OF POOL			INTERSECTING ARGUMENTS		
PRECISE	A02.00	TOLHN-U	00K-04301	AD00000 2 0	N-----		
AFTER ALL	101.00	ZH-F	00K-04302	M			
ALSO	101.00	-I	00K-04303	M			
OTHER	A02.00	PRUG-IE	00K-04304	MD10000	-----A-		
OTHER	A02.00	PRUG-IE	00K-04305	MD10000	-----N-		
OTHER	A02.00	PRUG-IE	00K-04306	MD10000	-----N-		
OTHER	101.00	JAVLENI-JA	00K-04307	MD10000	-----N-		
OTHER	450012010014	0000000000	AD1000000000	MD10000	-----N-		

A Clause with No Object  
Figure 57

## A Clause with an Impersonal Predicate Head

Figure 58

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI ORGANIZED WORD	3rd WORD	DICTONARY SERIAL NO.	
LAUMERATE	VOB.00	PERFCHISL-IV	00K-0117	VS OP30000	---				
AFEM	DO1.00	NESKULX-0	00K-01181	P XEACUNYKK	---				
SKREMAT	DO1.00	NESKULX-0	00K-01188	M	N-A-----N-A-----A-A-----A-A-----	B2B4	000000000000	142011428571	
PROBEM	NOB.10	ZALACH-	00K-0119	NDI4F000	-----G-----F-----			1169-0353328	
								1169-0999988	
								060900000000	
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE	
LAUMERATE	00	1P	00K-0117	VS OP30000	000V00CADO			III	V PRED
AFEM	00	07	00K-01181	P XEACUNYKK	---			III	V OBJECT
SKREMAT	00	11	00K-0119	NDI4F000	-----G-----F-----			III	OBJECT
PROBEM								III	OBJECT
HINDSIGHT									
					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE	
LAUMERATE	00K-01181		00K-01188	M	---			III	V PRED
AFEM	00K-01181		00K-01188	M	---			III	V OBJECT
SKREMAT	00K-01181		00K-01188	M	---			III	V OBJECT
PROBEM	00K-01181		00K-01188	M	---			III	V OBJECT

A Clause with No Explicit Subject and a First Person Plural Predicate Head  
Figure 59

Figure 60

Figure 60

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER (TRANSLITERATED)	RUSSIAN WORD	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.	
CHARACTERIZE	VOZ.CO CHTOB-Y	VOZ.CO XAKATEPIZOV A-T.	00A-0645	VK OP30000		Pq		213850000000	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00A-0646	AD00000 0	F-	B0B6		211100000000	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00A-0647	AD00000 0	N-----			095900000000	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00A-0648	AD00000 0	N-----			159400000000	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00A-0649	AD00000 0	-G-----N-A-----	P4		048110000000	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00A-0650	AD00000 0	-G-----N-A-----			157740000000	
ANALYZED TEXT									
			CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT			SYNTAGMATIC ROLE	
CHARACTERIZE	VOZ.CO CHTOB-Y	VOZ.CO XAKATEPIZOV A-T.	00 1A	00A-0645		Pq		1100 R CONJ	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00 15	00A-0646	F0	B0B6		645 T PRED	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00 12	00A-0647	N-----			INF ADVB	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00 15	00A-0648	-A-----			646 OBJECT	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00 16	00A-0649	-G-----	R4		648 N COMP	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.	00 16	00A-0650	-G-----			649 N COMP	
HINDSIGHT									
					INTERSECTING ARGUMENTS			ALTERNATIVE ROLE	
CHARACTERIZE	VOZ.CO XAKATEPIZOV A-T.	VOZ.CO XAKATEPIZOV A-T.			F0	B0B6		645 SUBJECT	

An Infinitive Predicate Head  
Figure 61

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS	RUSSIAN WORD	MARKER	TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO
VF	P	В	1	В	1	В			
VF	P	В	1	В	2	В			
VF	P	В	1	В	3	В			
VF	P	В	1	В	4	В			
VF	P	В	1	В	5	В			
VF	P	В	1	В	6	В			
VF	P	В	1	В	7	В			
VF	P	В	1	В	8	В			
VF	P	В	1	В	9	В			
VF	P	В	1	В	10	В			
VF	P	В	1	В	11	В			
VF	P	В	1	В	12	В			
VF	P	В	1	В	13	В			
VF	P	В	1	В	14	В			
VF	P	В	1	В	15	В			
VF	P	В	1	В	16	В			
VF	P	В	1	В	17	В			
VF	P	В	1	В	18	В			
VF	P	В	1	В	19	В			
VF	P	В	1	В	20	В			
VF	P	В	1	В	21	В			
VF	P	В	1	В	22	В			
VF	P	В	1	В	23	В			
VF	P	В	1	В	24	В			
VF	P	В	1	В	25	В			
VF	P	В	1	В	26	В			
VF	P	В	1	В	27	В			
VF	P	В	1	В	28	В			
VF	P	В	1	В	29	В			
VF	P	В	1	В	30	В			
VF	P	В	1	В	31	В			
VF	P	В	1	В	32	В			
VF	P	В	1	В	33	В			
VF	P	В	1	В	34	В			
VF	P	В	1	В	35	В			
VF	P	В	1	В	36	В			
VF	P	В	1	В	37	В			
VF	P	В	1	В	38	В			
VF	P	В	1	В	39	В			
VF	P	В	1	В	40	В			
VF	P	В	1	В	41	В			
VF	P	В	1	В	42	В			
VF	P	В	1	В	43	В			
VF	P	В	1	В	44	В			
VF	P	В	1	В	45	В			
VF	P	В	1	В	46	В			
VF	P	В	1	В	47	В			
VF	P	В	1	В	48	В			
VF	P	В	1	В	49	В			
VF	P	В	1	В	50	В			
VF	P	В	1	В	51	В			
VF	P	В	1	В	52	В			
VF	P	В	1	В	53	В			
VF	P	В	1	В	54	В			
VF	P	В	1	В	55	В			
VF	P	В	1	В	56	В			
VF	P	В	1	В	57	В			
VF	P	В	1	В	58	В			
VF	P	В	1	В	59	В			
VF	P	В	1	В	60	В			
VF	P	В	1	В	61	В			
VF	P	В	1	В	62	В			
VF	P	В	1	В	63	В			
VF	P	В	1	В	64	В			
VF	P	В	1	В	65	В			
VF	P	В	1	В	66	В			
VF	P	В	1	В	67	В			
VF	P	В	1	В	68	В			
VF	P	В	1	В	69	В			
VF	P	В	1	В	70	В			
VF	P	В	1	В	71	В			
VF	P	В	1	В	72	В			
VF	P	В	1	В	73	В			
VF	P	В	1	В	74	В			
VF	P	В	1	В	75	В			
VF	P	В	1	В	76	В			
VF	P	В	1	В	77	В			
VF	P	В	1	В	78	В			
VF	P	В	1	В	79	В			
VF	P	В	1	В	80	В			
VF	P	В	1	В	81	В			
VF	P	В	1	В	82	В			
VF	P	В	1	В	83	В			
VF	P	В	1	В	84	В			
VF	P	В	1	В	85	В			
VF	P	В	1	В	86	В			
VF	P	В	1	В	87	В			
VF	P	В	1	В	88	В			
VF	P	В	1	В	89	В			
VF	P	В	1	В	90	В			
VF	P	В	1	В	91	В			
VF	P	В	1	В	92	В			
VF	P	В	1	В	93	В			
VF	P	В	1	В	94	В			
VF	P	В	1	В	95	В			
VF	P	В	1	В	96	В			
VF	P	В	1	В	97	В			
VF	P	В	1	В	98	В			
VF	P	В	1	В	99	В			
VF	P	В	1	В	100	В			
VF	P	В	1	В	101	В			
VF	P	В	1	В	102	В			
VF	P	В	1	В	103	В			
VF	P	В	1	В	104	В			
VF	P	В	1	В	105	В			
VF	P	В	1	В	106	В			
VF	P	В	1	В	107	В			
VF	P	В	1	В	108	В			
VF	P	В	1	В	109	В			
VF	P	В	1	В	110	В			
VF	P	В	1	В	111	В			
VF	P	В	1	В	112	В			
VF	P	В	1	В	113	В			
VF	P	В	1	В	114	В			
VF	P	В	1	В	115	В			
VF	P	В	1	В	116	В			
VF	P	В	1	В	117	В			
VF	P	В	1	В	118	В			
VF	P	В	1	В	119	В			
VF	P	В	1	В	120	В			
VF	P	В	1	В	121	В			
VF	P	В	1	В	122	В			
VF	P	В	1	В	123	В			
VF	P	В	1	В	124	В			
VF	P	В	1	В	125	В			
VF	P	В	1	В	126	В			
VF	P	В	1	В	127	В			
VF	P	В	1	В	128	В			
VF	P	В	1	В	129	В			
VF	P	В	1	В	130	В			
VF	P	В	1	В	131	В			
VF	P	В	1	В	132	В			
VF	P	В	1	В	133	В			
VF	P	В	1	В	134	В			
VF	P	В	1	В	135	В			
VF	P	В	1	В	136	В			
VF	P	В	1	В	137	В			
VF	P	В	1	В	138	В			
VF	P	В	1	В	139	В			
VF	P	В	1	В	140	В			
VF	P	В	1	В	141	В			
VF	P	В	1	В	142	В			
VF	P	В	1	В	143	В			
VF	P	В	1	В	144	В			
VF	P	В	1	В	145	В			
VF	P	В	1	В	146	В			
VF	P	В	1	В	147	В			
VF	P	В	1	В	148	В			
VF	P	В	1	В	149	В			
VF	P	В	1	В	150	В			
VF	P	В	1	В	151	В			
VF	P	В	1	В	152	В			
VF	P	В	1	В	153	В			
VF	P	В	1	В	154	В			
VF	P	В	1	В	155	В			
VF	P	В	1	В	156	В			
VF	P	В	1	В	157	В			
VF	P	В	1	В	158	В			
VF	P	В	1	В	159	В			
VF	P	В	1	В	160	В			
VF	P	В	1	В	161	В			
VF	P	В	1	В	162	В			
VF	P	В	1	В	163	В			
VF	P	В	1	В	164	В			
VF	P	В	1	В	165	В			
VF	P	В	1	В	166	В			
VF	P	В	1	В	167	В			
VF	P	В	1	В	168	В			
VF	P	В	1	В	169	В			
VF	P	В	1	В	170	В			
VF	P	В	1	В	171	В			
VF	P	В	1	В	172	В			
VF	P	В	1	В	173	В			
VF	P	В	1	В	174	В			
VF	P	В	1	В	175	В			
VF	P	В	1	В	176	В			
VF	P	В	1	В	177	В			
VF	P	В	1	В	178	В			
VF	P	В	1	В	179	В			
VF	P	В	1	В	180	В			
VF	P	В	1	В	181	В			
VF	P	В	1	В	182	В			
VF	P	В	1	В	183	В			
VF	P	В	1	В	184	В			
VF	P	В	1	В	185	В			
VF	P	В	1	В	186	В			
VF	P	В	1	В	187	В			
VF	P	В	1	В	188	В			
VF	P	В	1	В	189	В			
VF	P	В	1	В	190	В			
VF	P	В	1	В	191	В			
VF	P	В	1	В	192	В			
VF	P	В	1	В	193	В			
VF	P	В	1	В	194	В			
VF	P	В	1	В	195	В			
VF	P	В	1	В	196	В			
VF	P	В	1	В	197	В			
VF	P	В	1	В	198	В			
VF	P	В	1	В	199	В			
VF	P	В	1	В	200	В			
VF	P	В	1	В	201	В			

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER (TRANSLITERATED)	RUSSIAN WORD	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
1*	P01.00	-FJ	\$ -0443	PN K STP 0	---C1---	---	00004-00000000		
2*	101.00	IL-T	\$ -0444	PN K STP 0	---C---	---	07840-00000000		
3*	P01.00	-FJ	\$ -0445	PN K STP 0	---T---XAD---	---	000070000000		
4*	V21.00	ILL-ET	\$ -0446	VK 0000000 3	---	B2B4	010210000000		
5*	A02.00	XCLNDN-C	\$ -0447	AD00000 3 0	N-----	---	21134-00000000		
6*			\$ -0448						
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL							
1*	00	1P	\$ -0443	PN K STP 0	---	---	---	SYNTACTIC ROLE	
2*	00	0A	\$ -0444	PN K STP 0	---	---	---	III L OBJ	
3*	00	0A	\$ -0445	PN K STP 0	---	---	---	INF CONJUNCT	
4*	01	07	\$ -0446	VK 0P30000 3	---	---	---	III IND OBJ	
5*	01	03	\$ -0447	AD00000 3 0	N-----	---	---	INF ARBTR	
6*	01	04	\$ -0448					443 V COMP	
								END OF SENT.	
HINDSIGHT									
					INTERSECTING ARGUMENTS				
1*	P01.00	-FJ	\$ -0443	PN K STP 0	---	---	---	ALTERNATIVE ROLE	
2*	101.00	IL-T	\$ -0444	PN K STP 0	---	---	---	III IND OBJ	
3*	P01.00	-FJ	\$ -0445	PN K STP 0	---	---	---	INF ARBTR	
4*	V21.00	RUC-ET	\$ -0446	VK 0P30000 3	---	---	---	INF ADVB	
5*	A02.00	XCLNDN-C	\$ -0447	AD00000 3 0	N-----	---	---	END OF SENT.	
6*			\$ -0448						

An Analysis with Left Object -- Indirect Object Ambiguity  
Figure 63

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.	
1	P	ОН-Т	0718	PN N STP 0	N-----			126772000002	
2	P	ОН-Т	0719	PN N STP 0	N-----			143221111111	
3	P	ОН-Т	0720	PN N STP 0	N-----			000070000000	
4	P	ОН-Т	0721	PN N STP 0	N-----			143110000000	
5	P	ОН-Т	0722	PN N STP 0	N-----				
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	SYNTACTIC ROLE						
1	00 18	5	0718	PN N STP 0	N-----			111	SUBJECT
2	00 06	5	0719	PN N STP 0	N-----			111	V PRED
3	00 06	5	0720	PN N STP 0	N-----			111	IND OBJ
4	01 07	5	0721	PN N STP 0	N-----			INF	ARBITR
5	01 03	5	0722	PN N STP 0	N-----				END OF SENT.
HINDSIGHT									
	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE							
1	N-----							INF	ARBITR
2	N-----								END OF SENT.

An Indirect Object  
Figure 64



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
SYMMETRICAL	A02.00	SIMMETRICHN- YE	00H-0216	AD00000	-----N-A-----A-A-----		183750000000		
LINE	A04.00	POLOSKOV- YE	00H-0217	AD00000	-----N-A-----A-A-----		150576655666		
WIFE	N07.00	LINI-I	00H-0218	ND11F000	-G-C-PN-A-----F-F-F-----		100400000000		
WIFE	IO4.00	VESKULIK-O	00H-0219	ND11F000	N-A-----N-A-----A-A-----	000000000000	118950333328		
WIFE	IO4.00	VESKULIK-O	00H-0219	ND11F000	N-A-----N-A-----A-A-----		118950999998		
WIFE	A02.00	VESTIMETRICH N-VX	00H-0220	AD00000	INCOMPAT FE		185010000000		
WIFE	A02.00	VESTIMETRICH N-VX	00H-0221	AD00000	-----GA-P-----A-A-----		118500000000		
ANALYZED TEXT									
			CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT			SYNACTIC	ROLE
SYMMETRICAL	A02.00	SIMMETRICHN- YE	00 12	00H-0216	AD00000	0		111	SUBJECT
LINE	A04.00	POLOSKOV- YE	00 10	00H-0217	AD00000	0		216	SUBJECTM
WIFE	N07.00	LINI-I	00 11	00H-0218	ND11F000	0		111	L OBJ
WIFE	IO4.00	VESKULIK-O	00 11	00H-0219	ND11F000	0		111	L OBJ
WIFE	IO4.00	VESKULIK-O	00 08	00H-0220	AD00000	0		111	L OBJ
WIFE	A02.00	VESTIMETRICH N-VX	00 09	00H-0221	AD00000	0		220	COMP CMP
HINDSIGHT									
SYMMETRICAL	A02.00	SIMMETRICHN- YE	00H-0216	AD00000	0			ALTERNATIVE	ROLE
LINE	A04.00	POLOSKOV- YE	00H-0217	AD00000	0			111	L OBJ
WIFE	N07.00	LINI-I	00H-0218	ND11F000	0			111	L OBJ
WIFE	IO4.00	VESKULIK-O	00H-0218	ND11F000	0			111	L OBJ
WIFE	IO4.00	VESKULIK-O	00H-0219	ND11F000	0			111	L OBJ
WIFE	A02.00	VESTIMETRICH N-VX	00H-0221	AD00000	0			111	L OBJ
WIFE	WIFE	221013011531	000000000000	220	COMP CMP			111	L OBJ
WIFE	WIFE	21921201812	000000000000	219	L OBJ			111	L OBJ

A Comparative Adverb Used as a Predicate Head  
Figure 65

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
ESSENTIAL	A01.00	SUSHCHESTVEN N-O	0 A-0348	AD01000 2 0	N-----		194040000000		
NOTE	V04.01	OTMETI-T.	0 A-0349	VS UP30000 *	F-----	B0R6	132540000000		
...			0 A-0370						
THAT	I01.00	CHT-U	0 A-0371	C			213448750000		
...			0 A-0372	PNCL STRI 0	N-----		213447500000		
CHARACTER	N06.00	OTTEL.MOST-	0 A-0373	MD11000	N-----	P2	052050000000		
CONNECTION	N01.00	OTTEL.MOST-OU	0 A-0374	MD11000	N-----	P4	147095000000		
...			0 A-0375	MD11000	N-----		097810000000		
SYLLABIC	V21.00	BYL-A		MD11000	N-----	B3	010866666666		
...			0 A-0376	AD0000 130	F-----	P400	030445545555		
CHARACTER	A01.00	OTTEL.MOST-	0 A-0376	AD0000 130	F-----				
...									
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT						
ESSENTIAL	00 14	0 A-0348	AD01000 2 0	N-----					
NOTE	00 05	0 A-0349	VS UP30000	F0		B0R6			
...									
THAT	00 20	0 A-0371	C						
...									
CHARACTER	00 15	0 A-0372	MD11000	N-----		P2			
...									
CONNECTION	00 12	0 A-0373	MD11000	N-----		R4			
...									
SYLLABIC	00 22	0 A-0374	MD11000	N-----					
...									
CHARACTER	00 25	0 A-0375	MD11000	N-----		B3			
...									
CHARACTER	00 14	0 A-0376	AD0000 130	F-----		R400			
...									
HINDSIGHT									
	INTERSECTING ARGUMENTS								
ESSENTIAL	0 A-0348	AD01000 2 0	N-----						
NOTE	0 A-0349	VS UP30000	F0			B0R6			
...									
THAT	0 A-0370								
...									
CHARACTER	0 A-0371	PNCL STRI 0	N-----						
...									
CONNECTION	0 A-0372	MD11000	N-----						
...									
SYLLABIC	0 A-0373	MD11000	N-----						
...									
CHARACTER	0 A-0374	MD11000	N-----						
...									
CHARACTER	0 A-0375	MD11000	N-----						
...									
CHARACTER	0 A-0376	AD0000 130	F-----						
...									
ALTERNATIVE									
	ROLE								
INF ADVB	111	SUBJECT							
INF CLAUSER	111	SUBJECT							
INF CONJUNCT	111	SUBJECT							
771K SUBJECT	771	SUBJECT							
771K L OBJ	771	SUBJECT							
771K OBJECT	771	SUBJECT							
771K SUBJECT	771	SUBJECT							
771 L OBJ	771	SUBJECT							
771 L OBJ	771	SUBJECT							

A Clause as an Object of a Verb

Figure 66



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
ALMO	101.00	PCHT-I	00K-0808	H			154170000000		
PRESENT	101.00	VSJA	00K-0809	PA K STF	0		000070000000		
CHAPTER	101.00	ASTOJASHCH- AJA	00K-0900	ADU0000	0		115240000000		
BY	101.00	BLAV-A	00K-0901	NDI25000			041940000000		
BY	101.00	BLU-ET	00K-0902	VK 0000000	3		010210000000		
BY	101.00	PCSVJASHCH- -A	00K-0903	ADU0000	130	B2B4	152438421040		
BY	101.00	IZUCHENT-JU	00K-0904	NDI1W000		P4	078100000000		
BY	101.00	PRUTSESS-OV	00K-0905	NDI1W000			164970000000		
BY	101.00	BEZ-	00K-0906	H			058666666666		
BY	101.00	POSLEDEJSTVI OJA	00K-0907	NDI1W000		GNOR00300100	152550000000		
BY	101.00	-I	00K-0908	H		P4	0000P0000000		
BY	101.00	OLK-K-U	00K-0909	H			0000P5000000		
BY	101.00	OLK-K-U	00K-0910	H			198152500000		
BY	101.00	POSIEDN-EM	00K-0911	KDK1A00	0	PAOR00AB0650	000020000000		
BY	101.00	PARAGRAF-E	00K-0912	NDI1W000			152540000000		
BY	101.00	WY	00K-0913	PA A PVP	0		136462000000		
BY	101.00	VAL-IM	00K-0914	V500P00000		B2	102313333338		
BY	101.00	PRE-STAVLENT -E	00K-0915	NDI1W000		P4	045100000000		
BY	101.00	STATSIONAR- YA	00K-0916	H			155850000000		
BY	101.00	PRUTSESS-AA	00K-0917	ADU0000	0	PAOR00340120	000120000000		
BY	101.00		00K-0918	NDI1W000			192100000000		
BY	101.00		00K-0919	H			164970000000		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTAGMATIC ROLE					
ALMO	00 1A	00K-0808	N	INF ADVB					
PRESENT	00 1A	00K-0809	N	111 SUBJECT					
CHAPTER	00 10	00K-0900	N	999 SUBJECT					
BY	00 11	00K-0901	N	000 SUBJECT					
BY	00 06	00K-0902	3	111 V PRED					
BY	00 11	00K-0903	3	002 V COMP					
BY	00 15	00K-0904	130	003 OBJECT					
BY	00 1A	00K-0905	N	004 N COMP					
BY	00 20	00K-0906	N	INF PREP					
BY	00 24	00K-0907	N	006 R COMP					
BY	00 24	00K-0908	N	INF CONJUNCT					
BY	00 24	00K-0909	N	INF ADVB					
BY	00 26	00K-0910	N	INF PREP					
BY	00 30	00K-0911	N	910 R COMP					
BY	00 30	00K-0912	N	911 R COMP					
BY	00 30	00K-0913	N	INF ARBTR					
BY	00 30	00K-0914	N	INF ARBTR					
BY	00 04	00K-0915	130	014 OBJECT					
BY	00 0A	00K-0916	N	INF PREP					
BY	00 10	00K-0917	N	INF PREP					
BY	00 14	00K-0918	N	916 R COMP					
BY	00 14	00K-0919	N	917 R COMP					
BY	00 14	00K-0919	N	END OF SENT.					

A Sentence with Two Clauses Not Separated by Commas

Figure 68



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS		3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO	
					ALTERNATIVE	ARGUMENTS			
RELATION	REL	ОНО	000000	ОНО	N-----F-----			1943+0000000	
WHICH	REL	КАКОЕ	000001	КАКОЕ	N-----F-----			0950+7959183	
TAKE	REL	ВЗЯТЬ	000002	ВЗЯТЬ	N-----F-----			1503+5000000	
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT		SYNTACTIC ROLE		
RELATION	00	20	ОНО	ОНО	N-----F-----		III SUBJECT		
WHICH	01	07	КАКОЕ	КАКОЕ	N-----F-----		INF COMMA		
TAKE	02	14	ВЗЯТЬ	ВЗЯТЬ	N-----F-----		INF SUBJECT		
	03	15	ВЗЯТЬ	ВЗЯТЬ	N-----F-----		INF V PRED		
HINDSIGHT									
					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE		
RELATION					N-----F-----		INF CLAUSER		
WHICH					N-----F-----		INF CONJUNCT		
TAKE					N-----F-----		INF SUBJECT		
					N-----F-----		INF MODIFIER		

A Relative Pronoun Used as a Subject of a Clause  
Figure 69

UNANALYZED TEXT				ANALYZED TEXT			
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	SIZE OF CHAIN NO. POOL	SYNTACTIC ROLE	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
ADDITIONAL STATE SYSTEM	101.00	FSL-I	00K-0861	00 14	00K-0861	P9	056520000000
	002.00	CCPOLNITEL* -OF	00K-0862	00 15	00K-0862	P9	054405000000
	003.00	ZNAMI-E	00K-0863	00 17	00K-0863	P4	072600000000
	004.00	SCSTOJANI-U	00K-0864	00 18	00K-0864	P4P9	109220000000
		SYSTEM-Y	00K-0865	00 23	00K-0865		1844P2857142
ADDITIONAL STATE SYSTEM	101.00	FSL-I	00K-0861	00 14	00K-0861		
	002.00	CCPOLNITEL* -UF	00K-0862	00 15	00K-0862		
	003.00	ZNAMI-E	00K-0863	00 17	00K-0863		
	004.00	SCSTOJANI-U	00K-0864	00 18	00K-0864		
		SYSTEM-Y	00K-0865	00 23	00K-0865		
ADDITIONAL STATE SYSTEM	002.00	CCPOLNITEL* -OF	00K-0862	00 15	00K-0862		
	003.00	ZNAMI-E	00K-0863	00 17	00K-0863		
	004.00	SCSTOJANI-U	00K-0864	00 18	00K-0864		
		SYSTEM-Y	00K-0865	00 23	00K-0865		

A Clause Introduced by a Conjunction  
Figure 70

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
BASIC	101.00	-V	00K-0265	N	---A-P---A-P	PAOR00AB0650	0000200000000		
WHICH	104.00	OSNOV-E	00K-0266	ND12F000	---C-P---		1203000000000		
THEORY	107.00	LEZM-IT	00K-0267	PK K STRITO	---G-CIP---		095009795915		
RANDOM	107.00	TEOPIT-JA	00K-0268	VN 0000000	---I-BAD---	B1B4B5	0992100000000		
PROCESS	107.00	SLUFHAJA-YX	00K-0269	ND11F000	N-----F-----		1971000000000		
	107.00	PRCTSFSE-CV	00K-0270	4000000	---GA-P---		18571145827		
			00K-0271	ND11F000	---G-----M-----		1649700000000		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
BASIC	00	23	00K-0265	---A-P---A-P	PAOR00AB0650	INF PREP			
WHICH	00	24	00K-0266	---G-----F-----		265 R COMP			
THEORY	00	27	00K-0267	---G-----F-----		266K N COMP			
RANDOM	00	29	00K-0268	00T000BADO		267 V PRED			
PROCESS	00	17	00K-0269	ND11F000		267 SUBJECT			
	00	21	00K-0270	4000000	---G-----A-----	269 N COMP			
	00	21	00K-0271	ND11F000	---G-----M-----	270 N COMP			
HINDSIGHT									
	CHAIN NO	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE					
BASIC	00	23	00K-0265	---C-----F-----	PAOR00AB0650	INF PREP			
WHICH	00	24	00K-0266	---G-----F-----		265 R COMP			
THEORY	00	27	00K-0267	---G-----F-----		266K N COMP			
RANDOM	00	29	00K-0268	00T000BADO		267 V PRED			
PROCESS	00	17	00K-0269	ND11F000		267 SUBJECT			
	00	21	00K-0270	4000000	---G-----A-----	269 N COMP			
	00	21	00K-0271	ND11F000	---G-----M-----	270 N COMP			
PREDICTION	WIPE	2671300000000	06000000000	06000000000	06000000000	06000000000			
PREDICTION	WIPE	2680120000000	00000000000	00000000000	00000000000	00000000000			

A Relative Pronoun Used as a Noun Complement  
Figure 71



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATE)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
PLAT	ACA.CU	PLUSK-IV	00H-0249	ADG0000	0		1440000000000		
SYSTEM	NCH.CU	SYSTEM-AMI	00H-0250	ND1ZF000			1844P2857142		
PROPERTY	NCH.CU	SVLJSTV-A	00H-0251	ND11N000			1810600000000		
OF DETERMINING	POI.CU	KOTAR-YV	00H-0252	PK K PTRITTO			095105510196		
STRIP	VCI.CU	UPRDELJA-JU TSJA	00H-0253	VNR0000000		BOB1B4B6	1274400000000		
CONDUCTION	NCH.CU	FORM-OJ	00H-0254	ND1ZF000			2093400000000		
	ACA.CU	POLSKUV-OGC	00H-0255	ADG0000	0		1505366666666		
	NCH.CU	BRUVONTR-A	00H-0257	NDK1M000			1613000000000		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL			PREFERRED ARGUMENT			SYNTACTIC ROLE	
PLAT	20	22	00H-0249	ADG0000	0			244	AGENT
SYSTEM	20	07	00H-0250	ND1ZF000				249	AGENT M
PROPERTY	20	07	00H-0251					INF	COMMA
OF DETERMINING	21	16	00H-0252	ND11N000				INF	ARBTR
STRIP	21	04	00H-0253	PA K PTRITTO				252	N COMP
CONDUCTION	22	07	00H-0254	VNR0000000				INF	ARBTR
	22	04	00H-0255	ND1ZF000				254	AGENT
	22	04	00H-0256	ADG0000	0			255	N COMP
	22	02	00H-0257	NDK1M000				256	N COMP
HINDSIGHT									
									ALTERNATIVE ROLE
PLAT	00H-0251		00H-0251		00H-0251		00H-0251		INF CLAUSER
SYSTEM	00H-0251		00H-0252		00H-0252		00H-0252		INF CONJUNCT
PROPERTY	00H-0252		00H-0253		00H-0253		00H-0253		INF ARBTR
OF DETERMINING	00H-0253		00H-0254		00H-0254		00H-0254		252 N COMP
STRIP	00H-0254		00H-0255		00H-0255		00H-0255		INF ARBTR
CONDUCTION	00H-0255		00H-0256		00H-0256		00H-0256		255 N COMP
	00H-0256		00H-0257		00H-0257		00H-0257		256 N COMP
INTERSECTING ARGUMENTS									
PLAT	00H-0251		00H-0251		00H-0251		00H-0251		INF CLAUSER
SYSTEM	00H-0251		00H-0252		00H-0252		00H-0252		INF CONJUNCT
PROPERTY	00H-0252		00H-0253		00H-0253		00H-0253		INF ARBTR
OF DETERMINING	00H-0253		00H-0254		00H-0254		00H-0254		252 N COMP
STRIP	00H-0254		00H-0255		00H-0255		00H-0255		INF ARBTR
CONDUCTION	00H-0255		00H-0256		00H-0256		00H-0256		255 N COMP
	00H-0256		00H-0257		00H-0257		00H-0257		256 N COMP

A Subordinate Clause Not Analyzable by the Present Program  
Figure 72

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
INTEGRATE	VOI.00	RASPADA-JUT JA	00X-03-1	VN 3000000	-----TBADR	B0B1B4B6	17302727270		
TURN (INT)	VOI.00	PREVRASHCH-A JAS.	00X-03-2	VNR0000000 1	B GR	B5	12440812490		
ATOM	NOI.00	ATUM-Y	00X-03-3	R	--A--P--A--P	PAORONAB0650	00020000000		
OTHER	NOI.00	FRUG-000	00X-03-4	ND11M000	-----N-A--		00467000000		
ELEMENT	NOI.00	ELEMENT-A	00X-03-5	KDK1000 0	-GA-----		C9570000000		
			00X-03-6	ND11M000	-G-----		21834000000		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
INTEGRATE	VOI.00	RASPADA-JUT JA	00 22 00X-03-1	VN 3040000	00000TBADR	B0B1B4B6	337 V PRED		
TURN (INT)	VOI.00	PREVRASHCH-A JAS.	00 15 00X-03-2		B GR	B5	INF COMMA		
ATOM	NOI.00	ATUM-Y	00 27 00X-03-3	VNR0P40000 1	--A--P--A--P	PAORONAB0650	342 GERUND		
OTHER	NOI.00	FRUG-000	00 30 00X-03-4	R	-----A--		INF PREP		
ELEMENT	NOI.00	ELEMENT-A	00 33 00X-03-5	ND11M000	-G-----		344 R COMP		
			00 36 00X-03-6	APK1000 0	-G-----		345 N COMP		
			00 40 00X-03-7	ND11M000	-G-----		346 N COMPM		
HINDSIGHT									
	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE							
INTEGRATE	00X-03-2	INF CLAUSER							
TURN (INT)	00X-03-2	INF CONJUNCT							
ATOM	00X-03-6	345 N COMP							
PREDICTION	WIPE		00010000010 000	APENT	-G-----	-B-----			
PREDICTION	WIPE		00010000010 000	APENT					

A Gerund Phrase  
Figure 73

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
ARTICLE	NOA.20	STAT.-I	004-0009	ND11F000	-G-----N-A-----F-----F-F-----		192120000000
PLACED	ACI.00	POMFSHCHENN- YE	004-0101	AD00000 30	-----N-A-----A-A-----	P300	151693333333
PRESENT	IOI.00	-V	004-0102	R	-----A-----A-P-----	PAORONAB0650	000020000000
COLLECTION	AOA.00	NASTUJASHCH- EM	004-0103	AD00000 0	-----P-----B-----		115240000000
	NOA.10	SEOPNIK-E	004-0104	ND11M000	-----P-----M-----		180115000000
SOME	VIZ.00	DA-JUT	004-0105	VN 0000000	-----TBAD-----	B1	045030000000
PRESENTATION	POI.00	NEKTOR-OE	004-0107	PK I STT 0	N-A-----N-N-----		11723846150
THEORETICAL	NIA.00	PRESTAVLENT -E	004-0108	ND11N000	N-A-----N-N-----	P4	195805000000
PROBLEM	IOI.00	-O	004-0109	R	-----A-----A-P-----	PAORON340120	000120000000
	AOA.00	TEOPETICHESK -IV	004-0110	AD01000 0	-----GA-----P-----		197120000000
	NOA.00	PRULEN-AX	004-0111	ND12F000	-----P-----F-----		160676666666
APPOINTING	AOA.00	VOZNIKAJUSHC M-IX	004-0112	AD0100 40	-----GA-----P-----	0000	021710000000
CONNECTION	IOI.00	-V	004-0113	R	-----A-----A-P-----	PAORONAB0650	000020000000
	NOA.00	SVJAZ-I	004-0114	ND11F000	-G-C-PN-A-----F-F-F-F-----	P2	181670000000
			004-0115				

## ANALYZED TEXT

	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
ARTICLE	NO 18	004-0009	ND11F000	111 SUBJECT
PLACED	NO 09	004-0101		INF COMMA
PRESENT	NO 20	004-0102	AD00000 30	099 MODIFIER
COLLECTION	NO 16	004-0103	AD00000 0	INF PREP
	NO 19	004-0104	ND11M000	102 R COMP
	NO 23	004-0105		103 R COMPM
SOME	NO 34	004-0106	VN 0000000	INF COMMA
PRESENTATION	NO 06	004-0107	PK I STT 0	111 V PREO
THEORETICAL	NO 10	004-0108	ND11N000	106 OBJECT
PROBLEM	NO 11	004-0109	R	107 OBJECTM
	NO 13	004-0110	AD01000 0	INF PREP
	NO 17	004-0111	ND12F000	109 R COMP
APPOINTING	NO 28	004-0112	AD0100 40	110 R COMPM
CONNECTION	NO 22	004-0113	R	INF COMMA
	NO 25	004-0114	ND11F000	111 MODIFIER
				INF PREP
				114 R COMP

## HINDSIGHT

	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
ARTICLE	004-0009 ND11F000	111 L OBJ
PLACED	004-0101	INF CLAUSER
PRESENT	004-0102 AD00000 30	INF CONJUNCT
COLLECTION	004-0103	111 L OBJ
SOME	004-0105	INF CLAUSER
PRESENTATION	004-0107 PN I STT 0	INF CONJUNCT
THEORETICAL	004-0112	106 OBJECT
PROBLEM	004-0114	INF CLAUSER
APPOINTING	004-0115	INF CONJUNCT

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
CIRCUIT	N04.00	SK-FM	00K-0077	MD12FOYO	1		19430944448		
SOLUTION	101.00	AL-JA	00K-0078				05197000000		
PROBLEM	N10.00	RESHENI-JA	00K-0079	MD11N000			17780000000		
PROBLEM	N04.00	ZALACH-	00K-0080	MD14F000			06090000000		
PROBLEM	004.00	VOZNIKAUSHC H-IX	00K-0081						
PROBLEM	101.00	ER-I	00K-0082	AD0100			02171000000		
PROBLEM	N10.00	IZUCHENI-I	00K-0083	MD11N000			15424555554		
PROBLEM	101.00	TAK-IX	00K-0084				07810000000		
PROBLEM	N10.00	JAVLENI-J	00K-0085	PK K PTDFTO			19527833330		
PROBLEM	004.00	JAVLENI-J	00K-0086	MD11N000			21926000000		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
CIRCUIT	02 10	00K-0077	MD12FOYO	1					
PROBLEM	02 11	00K-0078							
PROBLEM	02 12	00K-0079	MD11N000						
PROBLEM	02 13	00K-0080	MD14F000						
PROBLEM	02 21	00K-0081							
PROBLEM	02 32	00K-0082	AD0100						
PROBLEM	02 24	00K-0083							
PROBLEM	02 28	00K-0084	MD11N000						
PROBLEM	02 32	00K-0085	PK K PTDFTO						
PROBLEM	02 36	00K-0086	MD11N000						
HINDSIGHT									
	CHAIN NO	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE					
CIRCUIT	00K-0077	MD12FOYO	1						
PROBLEM	00K-0081								
PROBLEM	00K-0082	AD0100							
PROBLEM	00K-0085	PK K PTDFTO							
PROBLEM	00K-0086	MD11N000							
PROBLEM	00K-0086	MD11N000							
CIRCUIT	N04.00	SK-FM							
PROBLEM	004.00	VOZNIKAUSHC H-IX							
PROBLEM	101.00	TAK-IX							
PROBLEM	101.00	TAK-IX							
PROBLEM	101.00	JAVLENI-J							
PROBLEM	101.00	JAVLENI-J							

An Analysis of an Ambiguous Modifier  
Figure 75

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
MODE	101.00	V	YV-0190	P	-A-P-A--P	P40R0AB0650	000070000000
INFINITE	101.00	VIL-E	YV-0191	AD0000	-G-FIP-----	P700	016020000000
SUCCESSION	101.00	OPREDELNN-C J	YV-0192	AD0000	-G-FIP-----	P700	127770000000
PRECEDENCE	101.00	POSLEDUWATEL' NOST-I	YV-0193	AD0000	-G-FIP-----	P2	152690000000
SPACING	101.00	PAZ-	YV-0194	AD0000	-G-FIP-----	P2	137020000000
PLUSE	101.00	IL-I	YV-0195	AD0000	-G-FIP-----	P2	078400000000
ELECTRIC	101.00	IMFIL'S-OV	YV-0196	AD0000	-G-FIP-----	P2	078940000000
VOLTAGE	101.00	PHLEKTRICHES K-000	YV-0197	AD0000	-G-FIP-----	P2	217150000000
NUMBER	101.00	NAPPAZHENI- JA	YV-0198	AD0000	-G-FIP-----	P2	114500000000
NUMBER	101.00	PAZVALEW-OV	YV-0199	AD0000	-G-FIP-----	P2	112310000000
NUMBER	101.00	KOL-UM	YV-0200	AD0000	-G-FIP-----	P2	089450000000
NUMBER	101.00	CHISLA	YV-0201	AD0000	-G-FIP-----	P2	213740000000

## ANALYZED TEXT

	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
MODE	01	08	-A-P-A--P	INF PREP
INFINITE	01	11	-G-FIP-----	189 R COMP
SUCCESSION	01	14	-G-FIP-----	190 N COMP
PRECEDENCE	01	21	-G-FIP-----	191 N COMP
SPACING	01	19	-G-FIP-----	192 N COMP
PLUSE	01	22	-G-FIP-----	INF CONJUNCT
ELECTRIC	01	22	-G-FIP-----	193C N COMP
VOLTAGE	01	24	-G-FIP-----	195 N COMP
NUMBER	01	28	-G-FIP-----	196 N COMP
NUMBER	01	39	-G-FIP-----	INF COMMA
NUMBER	01	32	-G-FIP-----	197 MODIFIER
NUMBER	01	32	-G-FIP-----	199 AGENT
NUMBER	01	32	-G-FIP-----	200 N COMP

## HINDSIGHT

	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
MODE	-C-----	188 OBJECT
INFINITE	-G-----	188 AGENT
SUCCESSION	-G-----	188 OBJECT
PRECEDENCE	-G-----	191C N COMP
PLUSE	-G-----	INF CLAUSER
ELECTRIC	-G-----	INF CONJUNCT
VOLTAGE	-G-----	192 MODIFIER
NUMBER	-G-----	190 MODIFIER
NUMBER	-G-----	188 OBJECT
NUMBER	-G-----	188 AGENT
NUMBER	-G-----	199 OBJECT

An Incomplete Analysis of an Ambiguous Modifier

Figure 76

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT		SIZE OF POOL	CHAIN NO	SYNTACTIC ROLE		
			SERIAL NO.	WORD			PREFERRED ARGUMENT	ROLE	
...	...	...	000000	000000	...	...	...	...	...
...	...	...	000001	000001	...	...	...	...	...
...	...	...	000002	000002	...	...	...	...	...
...	...	...	000003	000003	...	...	...	...	...
...	...	...	000004	000004	...	...	...	...	...
...	...	...	000005	000005	...	...	...	...	...
...	...	...	000006	000006	...	...	...	...	...
...	...	...	000007	000007	...	...	...	...	...
...	...	...	000008	000008	...	...	...	...	...
...	...	...	000009	000009	...	...	...	...	...
...	...	...	000010	000010	...	...	...	...	...
...	...	...	000011	000011	...	...	...	...	...
...	...	...	000012	000012	...	...	...	...	...
...	...	...	000013	000013	...	...	...	...	...
...	...	...	000014	000014	...	...	...	...	...
...	...	...	000015	000015	...	...	...	...	...
...	...	...	000016	000016	...	...	...	...	...
...	...	...	000017	000017	...	...	...	...	...
...	...	...	000018	000018	...	...	...	...	...
...	...	...	000019	000019	...	...	...	...	...
...	...	...	000020	000020	...	...	...	...	...
...	...	...	000021	000021	...	...	...	...	...
...	...	...	000022	000022	...	...	...	...	...
...	...	...	000023	000023	...	...	...	...	...
...	...	...	000024	000024	...	...	...	...	...
...	...	...	000025	000025	...	...	...	...	...
...	...	...	000026	000026	...	...	...	...	...
...	...	...	000027	000027	...	...	...	...	...
...	...	...	000028	000028	...	...	...	...	...
...	...	...	000029	000029	...	...	...	...	...
...	...	...	000030	000030	...	...	...	...	...
...	...	...	000031	000031	...	...	...	...	...
...	...	...	000032	000032	...	...	...	...	...
...	...	...	000033	000033	...	...	...	...	...
...	...	...	000034	000034	...	...	...	...	...
...	...	...	000035	000035	...	...	...	...	...
...	...	...	000036	000036	...	...	...	...	...
...	...	...	000037	000037	...	...	...	...	...
...	...	...	000038	000038	...	...	...	...	...
...	...	...	000039	000039	...	...	...	...	...
...	...	...	000040	000040	...	...	...	...	...
...	...	...	000041	000041	...	...	...	...	...
...	...	...	000042	000042	...	...	...	...	...
...	...	...	000043	000043	...	...	...	...	...
...	...	...	000044	000044	...	...	...	...	...
...	...	...	000045	000045	...	...	...	...	...
...	...	...	000046	000046	...	...	...	...	...
...	...	...	000047	000047	...	...	...	...	...
...	...	...	000048	000048	...	...	...	...	...
...	...	...	000049	000049	...	...	...	...	...
...	...	...	000050	000050	...	...	...	...	...
...	...	...	000051	000051	...	...	...	...	...
...	...	...	000052	000052	...	...	...	...	...
...	...	...	000053	000053	...	...	...	...	...
...	...	...	000054	000054	...	...	...	...	...
...	...	...	000055	000055	...	...	...	...	...
...	...	...	000056	000056	...	...	...	...	...
...	...	...	000057	000057	...	...	...	...	...
...	...	...	000058	000058	...	...	...	...	...
...	...	...	000059	000059	...	...	...	...	...
...	...	...	000060	000060	...	...	...	...	...
...	...	...	000061	000061	...	...	...	...	...
...	...	...	000062	000062	...	...	...	...	...
...	...	...	000063	000063	...	...	...	...	...
...	...	...	000064	000064	...	...	...	...	...
...	...	...	000065	000065	...	...	...	...	...
...	...	...	000066	000066	...	...	...	...	...
...	...	...	000067	000067	...	...	...	...	...
...	...	...	000068	000068	...	...	...	...	...
...	...	...	000069	000069	...	...	...	...	...
...	...	...	000070	000070	...	...	...	...	...
...	...	...	000071	000071	...	...	...	...	...
...	...	...	000072	000072	...	...	...	...	...
...	...	...	000073	000073	...	...	...	...	...
...	...	...	000074	000074	...	...	...	...	...
...	...	...	000075	000075	...	...	...	...	...
...	...	...	000076	000076	...	...	...	...	...
...	...	...	000077	000077	...	...	...	...	...
...	...	...	000078	000078	...	...	...	...	...
...	...	...	000079	000079	...	...	...	...	...
...	...	...	000080	000080	...	...	...	...	...
...	...	...	000081	000081	...	...	...	...	...
...	...	...	000082	000082	...	...	...	...	...
...	...	...	000083	000083	...	...	...	...	...
...	...	...	000084	000084	...	...	...	...	...
...	...	...	000085	000085	...	...	...	...	...
...	...	...	000086	000086	...	...	...	...	...
...	...	...	000087	000087	...	...	...	...	...
...	...	...	000088	000088	...	...	...	...	...
...	...	...	000089	000089	...	...	...	...	...
...	...	...	000090	000090	...	...	...	...	...
...	...	...	000091	000091	...	...	...	...	...
...	...	...	000092	000092	...	...	...	...	...
...	...	...	000093	000093	...	...	...	...	...
...	...	...	000094	000094	...	...	...	...	...
...	...	...	000095	000095	...	...	...	...	...
...	...	...	000096	000096	...	...	...	...	...
...	...	...	000097	000097	...	...	...	...	...
...	...	...	000098	000098	...	...	...	...	...
...	...	...	000099	000099	...	...	...	...	...
...	...	...	000100	000100	...	...	...	...	...
...	...	...	000101	000101	...	...	...	...	...
...	...	...	000102	000102	...	...	...	...	...
...	...	...	000103	000103	...	...	...	...	...
...	...	...	000104	000104	...	...	...	...	...
...	...	...	000105	000105	...	...	...	...	...
...	...	...	000106	000106	...	...	...	...	...
...	...	...	000107	000107	...	...	...	...	...
...	...	...	000108	000108	...	...	...	...	...
...	...	...	000109	000109	...	...	...	...	...
...	...	...	000110	000110	...	...	...	...	...
...	...	...	000111	000111	...	...	...	...	...
...	...	...	000112	000112	...	...	...	...	...
...	...	...	000113	000113	...	...	...	...	...
...	...	...	000114	000114	...	...	...	...	...
...	...	...	000115	000115	...	...	...	...	...
...	...	...	000116	000116	...	...	...	...	...
...	...	...	000117	000117	...	...	...	...	...
...	...	...	000118	000118	...	...	...	...	...
...	...	...	000119	000119	...	...	...	...	...
...	...	...	000120	000120	...	...	...	...	...
...	...	...	000121	000121	...	...	...	...	...
...	...	...	000122	000122	...	...	...	...	...
...	...	...	000123	000123	...	...	...	...	...
...	...	...	000124	000124	...	...	...	...	...
...	...	...	000125	000125	...	...	...	...	...
...	...	...	000126	000126	...	...	...	...	...
...	...	...	000127	000127	...	...	...	...	...
...	...	...	000128	000128	...	...	...	...	...
...	...	...	000129	000129	...	...	...	...	...
...	...	...	000130	000130	...	...	...	...	...
...	...	...	000131	000131	...	...	...	...	...
...	...	...	000132	000132	...	...	...	...	...
...	...	...	000133	000133	...	...	...	...	...
...	...	...	000134	000134	...	...	...	...	...
...	...	...	000135	000135	...	...	...	...	...
...	...	...	000136	000136	...	...	...	...	...
...	...	...	000137	000137	...	...	...	...	...
...	...	...	000138	000138	...	...	...	...	...
...	...	...	000139	000139	...	...	...	...	...
...	...	...	000140	000140	...	...	...	...	...
...	...	...	000141	000141	...	...	...	...	...
...	...	...	000142	000142	...	...	...	...	...
...	...	...	000143	000143	...	...	...	...	...
...	...	...	000144	000144	...	...	...	...	...
...	...	...	000145	000145	...	...	...	...	...
...	...	...	000146	000146	...	...	...	...	...
...	...	...	000147	000147	...	...	...	...	...
...	...	...	000148	000148	...	...	...	...	...
...	...	...	000149	000149	...	...	...	...	...
...	...	...	000150	000150	...	...	...	...	...
...	...	...	000151	000151	...	...	...	...	...

ANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT		SIZE OF POOL	CHAIN NO	SYNTACTIC ROLE		
			SERIAL NO.	WORD			PREFERRED ARGUMENT	ROLE	
...	...	...	000000	000000	...	...	...	...	...
...	...	...	000001	000001	...	...	...	...	...
...	...	...	000002	000002	...	...	...	...	...
...	...	...	000003	000003	...	...	...	...	...
...	...	...	000004	000004	...	...	...	...	...
...	...	...	000005	000005	...	...	...	...	...
...	...	...	000006	000006	...	...	...	...	...
...	...	...	000007	000007	...	...	...	...	...
...	...	...	000008	000008	...	...	...	...	...
...	...	...	000009	000009	...	...	...	...	...
...	...	...	000010	000010	...	...	...	...	...
...	...	...	000011	000011	...	...	...	...	...
...	...	...	000012	000012	...	...	...	...	...
...	...	...	000013	000013	...	...	...	...	...
...	...	...	000014	000014	...	...	...	...	...
...	...	...	000015	000015	...	...	...	...	...
...	...	...	000016	000016	...	...	...	...	...
...	...	...	000017	000017	...	...	...	...	...
...	...	...	000018	000018	...	...	...	...	...
...	...	...	000019	000019	...	...	...	...	...
...	...	...	000020	000020	...	...	...	...	...
...	...	...	000021	000021	...	...	...	...	...
...	...	...	000022	000022	...	...	...	...	...
...	...	...	000023	000023	...	...	...	...	...
...	...	...	000024	000024	...	...	...	...	...
...	...	...	000025	000025	...	...	...	...	...
...	...	...	000026	000026	...	...	...	...	...
...	...	...	000027	000027	...	...	...	...	...
...	...	...	000028	000028	...	...	...	...	...
...	...	...	000029	000029	...	...	...	...	...
...	...	...	000030	000030	...	...	...	...	...
...	...	...							

UNANALYZED TEXT									
CLASS MARKER		RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
WITH	101.00	С	00H-0336	H	-GA-I--GA-I-	IGARQOAB1111	178910000000		
HELP	NO4.10	ПОМОЩЬ-Г-1	00H-0337	H	-G--N-A--		151710000000		
FOIL	NO4.30	ФЕЛ-Г-1	00H-0338	H	-G--N-A--		209100000000		
CRISPRS	NO4.00	СОЗНАНИЕ-Г	00H-0339	H	-G--N-A--		120200000000		
AND	101.00	И	00H-0340	H	-G--N-A--		000000000000		
AT 50	101.00	И	00H-0341	H	-G--N-A--		000000000000		
CLUE	NO2.00	КЛЕ-ЖА	00H-0342	H	-G--N-A--		088500000000		
SILE	VO4.00	КЛЕ-ЖА	00H-0342	H	-G--N-A--		088500000000		
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE				
WITH	101.00	00 15	00H-0336	-GA-I--GA-I-	INF PREP				
HELP	NO4.10	00 18	00H-0337	-G--N-A--	336 R COMP				
FOIL	NO4.30	00 21	00H-0338	-G--N-A--	337 N COMP				
CRISPRS	NO4.00	00 24	00H-0339	-G--N-A--	INF COMMA				
AND	101.00	01 35	00H-0340	-G--N-A--	INF ARBTR				
CLUE	NO2.00	01 03	00H-0341	-G--N-A--	INF CONJUNCT				
SILE	NO2.00	02 03	00H-0342	-G--N-A--	INF ARBTR				
HINDSIGHT									
WITH	101.00	00H-0337	ND11F100	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE				
HELP	NO4.10	00H-0339		-G--N-A--	335 AGENT				
FOIL	NO4.30	00H-0339		-G--N-A--	INF CLAUSER				
CRISPRS	NO4.00	00H-0340	ND12F20X	-G--N-A--	INF CONJUNCT				
AND	101.00	00H-0341		-G--N-A--	INF ARBTR				
CLUE	NO2.00	00H-0342	ND11M100	-G--N-A--	INF ADVB				
SILE	VO4.00	00H-0342	VNOOP70000	-G--N-A--	INF ARBTR				

A Series  
Figure 78

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE	ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTONARY SERIAL NO.
to be	101.00	bya-	004-03221	C				085242333560
to be	101.00	kaa-	004-03228					085240000000
to be	101.00	el. tr. y	004-0323					206510004000
	101.00	•	004-0324	DI110YO		-----N-A-----		
to be	101.00	yapav. l. n. y	004-0325	ADCOUG		-----A-A-----		114470000000
to be	101.00	tr. v. t. v. l. n. y	004-0326	DI110GO		-----N-A-----	P300	130710000000
	101.00	•	004-0327			-----N-A-----		
to be	101.00	sl. n. l. n. y	004-0328	ADCOUGO		-----A-A-----		041466666666
to be	101.00	sl. n. y	004-0329			-----A-A-----		194330000000
to be	101.00	•	004-0330	DI120YO		-----F-F-----		000000000000
to be	101.00	•	004-0331			-----N-A-----		000000000000
to be	101.00	•	004-0332	SA		NGACIPN6ACIP	AAAAAAAAAAAA	197878000000
to be	101.00	•	004-0333			-----TBAD-----	B1B3B4	109710000000
to be	101.00	tr. v. t. v. l. n. y	004-0334	ADCOUGO		-----N-----		010820000000
to be	101.00	tr. v. t. v. l. n. y	004-0335	ADCOUGO		FR	B0B1B4B6	075116166666

C-CHAIN NO	SIZE OF POOL		PREFERRED ARGUMENT		SYNTACTIC ROLE
	NO	POOL	PREFERRED	ARGUMENT	
101.00 KAF--	00	23	00H-03221	C	321K R CONJ
101.00 FIL-TR-V	00	19	00H-0323	NOI1MOYO	322 SUBJECT
00.00	00	20	00H-0324	+	1NF COMMA
001.00 NAPRAVLNNA-V E	00	30	00H-0325	ADGONG 30	323 MODIFER
001.00 OTVETIVTEL-T	00	26	00H-0326	NOI1MOO	325 MODIFER
00.00	00	23	00H-0327	+	1NF COMMA
002.00 GIPION-VE	00	34	00H-0328	ADGONG 0	326 MODIFER
001.00 XEL-V	00	27	00H-0329	NOI1MOYO	328 MODIFER
101.00 T-P--	00	27	00H-0331	C	1NF CONJUNCT
00.00	00	29	00H-0332	A	328C MODIFER
009.00 MCG-UT	00	41	00H-0333	VN 0900000	1NF COMMA
001.00 MYSTR-U	00	13	00H-0334	ADGONG 0 0	322 V PRED
001.00 IZGOTAVI VA-- T, S, A	00	13	00H-0335	VN 0940000	1NF ADVB
001.00	00	13	00H-0335	VN 0940000	323 V MAST

A Series  
Figure 79





The Effect of a Negative on the Analysis of a Modifier

The Effect of a Negative on the Analysis of a Modifier

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
COORDINATE	NO4.00	ORCTN-AT	00A-0343	ND12F000	1		1285500000000		
REFLECTED	AO1.00	OTRAZHEHNA-OR C	00A-0344	AD0000	30	P300	1335000000000		
SIGNAL	NO1.00	SIGNAL-A	00A-0345	ND11M000			1833700000000		
CONFIRMING	AO4.00	SOUTVETSTVUJ USHCH-IX	00A-0346		*				
IFN	DO1.00	RESJAT-T	00A-0347	AD0100	40	P200	1881100000000		
DIFFERENT	AO2.00	PAZLICHN-YM	00A-0348	NA RACJPK			0492466666666		
L1STANCE	NOA.00	PALINOST-JAM	00A-0349	AD0000	0		1708000000000		
			00A-0350	ND11F000		P2	0455000000000		
ANALYZED TEXT									
			CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT		SYNTAGMATIC ROLE		
COORDINATE	NO4.00	ORCTN-AT	00 10	00A-0343	ND12F000	1	342 OBJECTN		
REFLECTED	AO1.00	OTRAZHEHNA-OR C	00 11	00A-0344	AD0000	30	343 N COMPH		
SIGNAL	NO1.00	SIGNAL-A	00 12	00A-0345	ND11M000		344 N COMPH		
CONFIRMING	AO4.00	SOUTVETSTVUJ USHCH-IX	00 15	00A-0346		*	INF COMMA		
IFN	DO1.00	RESJAT-T	00 26	00A-0347	AD0100	40	343 MODIFIER		
DIFFERENT	AO2.00	PAZLICHN-YM	00 16	00A-0348	NA RACJPK		347 MODIFIER		
L1STANCE	NOA.00	PALINOST-JAM	00 13	00A-0350	ND11F000		INF ARBTR		
							349 ARBTR M		
HINDSIGHT									
					INTERSECTING ARGUMENTS		ALTERNATIVE ROLE		
PREDICTION	*IPEP	144012001650 000010000000 000	AGENT				INF CLAUSER		
IFN		00A-0346					INF CONJUNCT		
IFN	DO1.00	RESJAT-T	00A-0348	NA RACJPK			0000000000000		
PREDICTION	*IPEP	4070120000650 000000000000 000	OBJECT				0000000000000		
IFN	DO1.00	RESJAT-T	00A-0348	DN RACJPK			0000000000000		
PREDICTION	*IPEP	3087120000115 000000000000 347	MODIFIER				0000000000000		
L1STANCE	AO2.00	PAZLICHN-YM	00A-0349	AD0000	0		INF ARBTR		

An Analysis with a Master-object Ambiguity  
Figure 81

A Compound Propositional Complement

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI ORGANIZED WORD	DICTIONARY SERIAL NO.		
UTMINISH	V04.20	UMEN.SHT-T.	00H-0531	VS00P70000	F-	B0B6	20395000000		
UTMINISH	NO1.00	PAZMER-V	00H-0532	MD11M000	-----N-A-----		171223500000		
A'D	NO1.00	-I	00H-0533	C			0000P0000000		
A'FIGT	NO1.00	VES-	00H-0534	MD11M300	N-A-----		0000P5000000		
							013970000000		
ANALYZED TEXT									
		CHAIN NO.	SIZE OF POOL						
UTMINISH	V04.20	NO 14	00H-0531	VS00P70000	PREFERRED ARGUMENT	B0B6	529	V	HAST
UTMINISH	NO1.00	NO 16	00H-0532	MD11M000	F0		531	OBJECT	
A'D	NO1.00	NO 19	00H-0533	C	-----A-----		INF	CONJUNCT	
A'FIGT	NO1.00	NO 19	00H-0534	MD11M300	--A-----		532C	OBJECT	
HINDSIGHT									
UTMINISH	V04.20	NO 14	00H-0531	VS00P70000	INTERSECTING ARGUMENTS	B0B6	526	V	HAST
A'FIGT	NO1.00	NO 19	00H-0534	MD11M300	F0		INF	ADVB	
					--A-----		528C	R	COMP

A Compound Object  
Figure 83

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	3rd	DICTIONARY SERIAL NO.	
ABSENCE	N10.00	OTSUTSTVI-E	00A-1706	ND11N800	N-A-----N-N-----	P4		134400000000	
NONLINEAR	A02.00	NELINEJN-YX	00A-1707	AD00000	-----GA--P-----			117200000000	
EFFECT	N01.00	FHEFT-OV	00A-1708	ND11M800	-----G-----N-----			219000000000	
AND	I01.00	-I	00A-1709	C				000000000000	
ALSO	I01.00	-I	00A-1709	H				000000000000	
CONSTANCY	N08.00	POSTOJANSTV-0	00A-1710	ND11N100	N-A-----N-N-----			000000000000	
FACTOR	N01.00	KHEFTSTV-T-A	00A-1711	ND11M000	-----G-----M-----			153010000000	
AMPLIFICATION	N10.00	USILENI-JA	00A-1712	ND11N100	-----G-----N-----			095510000000	
AVERAGING	A04.00	USKFDNJAUSH	00A-1713	AD00000	-----GA-----B-----	P4		205240000000	
DEVICE	N08.00	USTROUSTV-A	00A-1714	ND11N800	-----G-----N-----			206243333333	
PROVIDE	V01.00	OBESPECHIVA- JUTSJA	00A-1715	VN OP30000	-----T8ADR-----	8081B486		206900000000	
								120800000000	
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
ABSENCE	00 18	00A-1706	ND11N800	N-----N-----	R4			III SUBJECT	
NONLINEAR	00 10	00A-1707	AD00000	-----G-----A-----				706 N COMP	
EFFECT	00 14	00A-1708	ND11M800	-----G-----M-----				707 N CONJUNCT	
AND	00 14	00A-1709	C					INF CONJUNCT	
CONSTANCY	00 14	00A-1710	ND11N100	N-----N-----				706C SUBJECT	
FACTOR	00 12	00A-1711	ND11M000	-----G-----H-----				710 N COMP	
AMPLIFICATION	00 15	00A-1712	ND11N100	-----G-----N-----				711 N COMP	
AVERAGING	00 19	00A-1713	AD00000	-----G-----B-----	R4			712 N COMP	
DEVICE	00 23	00A-1714	ND11N800	-----G-----N-----				713 N COMP	
PROVIDE	00 23	00A-1715	VN OP40000	00000T8ADR	8081B486			III V PRED	
HINDSIGHT									
	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE							
ABSENCE	00A-1706	ND11N800	-----A-----N-----	R4				III L OBJ	
NONLINEAR	00A-1707	AD00000	-----A-----A-----					III L OBJ	
ALSO	00A-1709	H						INF ADVB	
CONSTANCY	00A-1710	ND11N100	-----A-----N-----					III L OBJ	
AMPLIFICATION	00A-1712	ND11N100	-----A-----N-----					III L OBJ	
AVERAGING	00A-1713	AD00000	-----A-----M-----	R4				III L OBJ	
DEVICE	00A-1714	ND11N800	-----A-----N-----					III L OBJ	

A Compound Subject  
Figure 84

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
			SERIAL NO.						
UN	101.00	N-A	00H-0177	R	AD00000	--A--P--A--P	PA00R00DF0560	110780000000	
STRIP	101.00	ПОЛОСКОВ-УХ	00H-0178		AD00000	--GA--P		150536666666	
LINE	107.00	ПОЛОСКОВ-УХ	00H-0179		ND11F000	--GA--P		100400000000	
SYMMETRICAL	101.00	СИМЕТРИЧН-ОГО	00H-0180		AD00000	--GA--P		183790000000	
AND	101.00	-I	00H-0181	C		--GA--P		000080000000	
ALSO	101.00	-I	00H-0182		AD00000	--GA--P		000080000000	
UNBALANCED	101.00	НЕСИМЕТРИЧН-ОГО	00H-0182		AD00000	--GA--P		1188P0000000	
TYPE	101.00	ТИП-ОВ	00H-0183		ND11M0Y0	--GA--P		197780000000	
ANALYZED TEXT									
	CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
UN	101.00	N-A	16 00H-0177 R	AD00000	--A--P--A--P	PA00R00DF0560	177 R COMP		
STRIP	101.00	ПОЛОСКОВ-УХ	16 00H-0178	AD00000	--A--P--A--P		178 R COMP		
LINE	107.00	ПОЛОСКОВ-УХ	22 00H-0179	ND11F000	--A--P--A--P		179 R COMP		
SYMMETRICAL	101.00	СИМЕТРИЧН-ОГО	22 00H-0180	AD00000	--G--P--A--P		179 N COMP		
AND	101.00	-I	26 00H-0181	C	--G--P--A--P		180 N COMP		
UNBALANCED	101.00	НЕСИМЕТРИЧН-ОГО	27 00H-0182	AD00000	--G--P--A--P		180 N COMP		
TYPE	101.00	ТИП-ОВ	27 00H-0183	ND11M0Y0	--G--P--A--P		180 N COMP		
HINDSIGHT									
	CHAIN NO.	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE					
UN	101.00	N-A	16 00H-0177 R	AD00000	--A--P--A--P	PA00R00DF0560	172 OBJECT		
STRIP	101.00	ПОЛОСКОВ-УХ	16 00H-0178	AD00000	--A--P--A--P		172 OBJECT		
LINE	107.00	ПОЛОСКОВ-УХ	22 00H-0179	ND11F000	--A--P--A--P		172 OBJECT		
SYMMETRICAL	101.00	СИМЕТРИЧН-ОГО	22 00H-0180	AD00000	--G--P--A--P		180C N COMP		
AND	101.00	-I	26 00H-0181	C	--G--P--A--P		178C R COMP		
UNBALANCED	101.00	НЕСИМЕТРИЧН-ОГО	27 00H-0182	AD00000	--G--P--A--P		174C N COMP		
TYPE	101.00	ТИП-ОВ	27 00H-0183	ND11M0Y0	--G--P--A--P		172 OBJECT		

Two Compound Singular Adjectives with One Plural Master  
Figure 85

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT		CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.	
ONE'S OWN		POI.00	SVU-I	00K-0159	PA K PAS	N-A-----	-----A-A-----	18151090090	
SPEED		NO4.00	SKUPST--	00K-0160	ND11F000	-----F-F-----	-----P2	18492000000	
AND		101.00	-I	00K-0161	C	-----N-A-----	-----	00000000000	
ALSO		101.00	-I	00K-0161	H	-----N-A-----	-----	00000000000	
POSITION		N19.00	POLOZHENI-E	00K-0162	ND11N000	-----N-N-----	-----P4P9	00000500000	
						-----N-N-----	-----	15041000000	
ANALYZED TEXT									
		CHAIN NO	SIZE OF POOL						
ONE'S OWN		00 14	00K-0159	PA K PAS	L				
SPEED		01 11	00K-0160	ND11F000	L				
AND		01 04	00K-0161	C	P2				
POSITION		02 04	00K-0162	ND11N000	P4P9				
HINDSIGHT									
PREDICTION	WIPE	15901300053	00000000000	00000000000	156 0BJFCT				
SPEED	NO4.00	SKUPST--	00K-0160	ND11F000	N-A-----	-----F-F-----	-----P2		
AND	101.00	-I	00K-0161	C	-----N-A-----	-----	-----		
POSITION	N19.00	POLOZHENI-E	00K-0162	ND11N000	-----N-N-----	-----P4P9			
SYNTACTIC ROLE									
							156	OBJECT	
							INF	ARBTR	
							INF	CONJCT	
							INF	ARBTR	
ALTERNATIVE ROLE									
							INF	ARBTR	
							INF	ADV8	
							INF	ARBTR	

A Plural Adjective with Compound Singular Masters  
Figure 86





ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL						PREFERRED ARGUMENT	SYNTACTIC ROLE
REFLEX	101.00	004-06431	UDNAK-U						116 R CONJ
SPITE (OF)	101.00	004-0644	NESMUTH-JA						INF COMMA
ABSTRACTNESS	101.00	004-0645	MAZ						INF ADVB
AD	101.00	004-0646	KNSPEKTIVAC ST-I						INF PREP
AD	101.00	004-0647	MAZ						666 R COMP
AD	101.00	004-0648	MAZ						INF CONJUNCT
AD	101.00	004-0649	MAZ						INF ADVB
AD	101.00	004-0650	MAZ						667C R COMP
AD	101.00	004-0651	MAZ						670 N COMP
AD	101.00	004-0652	MAZ						671 N COMP
AD	101.00	004-0653	MAZ						672 N COMP
AD	101.00	004-0654	MAZ						INF COMMA
AD	101.00	004-0655	MAZ						663 SUBJECT
AD	101.00	004-0656	MAZ						INF CONJUNCT
AD	101.00	004-0657	MAZ						INF PREP
AD	101.00	004-0658	MAZ						677 R COMP
AD	101.00	004-0659	MAZ						678 R COMP
AD	101.00	004-0660	MAZ						679 R COMP
AD	101.00	004-0661	MAZ						681 V COMP
AD	101.00	004-0662	MAZ						INF CONJUNCT
AD	101.00	004-0663	MAZ						682C V COMP
AD	101.00	004-0664	MAZ						INF PREP
AD	101.00	004-0665	MAZ						685 R COMP
AD	101.00	004-0666	MAZ						686 OBJECT
AD	101.00	004-0667	MAZ						687 N COMP
AD	101.00	004-0668	MAZ						688 N COMP
AD	101.00	004-0669	MAZ						689 N COMP
AD	101.00	004-0670	MAZ						INF CONJUNCT
AD	101.00	004-0671	MAZ						685 PREP
AD	101.00	004-0672	MAZ						692 R COMP
AD	101.00	004-0673	MAZ						693 N COMP
AD	101.00	004-0674	MAZ						694 N COMP
AD	101.00	004-0675	MAZ						695 N COMP
AD	101.00	004-0676	MAZ						END OF SENT.

Figure 87 (continued)

[illegible]

Figure 87 (continued)

UNANALYZED TEXT			3rd			DICTIONARY	
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	SERIAL NO.
TEST	N10.00	TESTYANT-1-A	00A-2628	N11N000	-G---N-A---	P4	083340000000
...	V05.00	POKAZAL-I	00A-2629	V500P2ESV0	---PPPAD-	P7 5%	149200000000
...	N10.00	...	00A-2630	...	...	...	...
...	IC1.00	CHT-U	00A-2631	PNC1 STR1 0	N-A-----	...	213848750000
...	PO1.00	CHT-U	00A-2632	N11N000	N-A-----	...	213848750000
...	N10.00	VEPENE-E	00A-2633	N11M000	-G-----	P4	011800000000
...	IC1.00	CHU-A	00A-2634	...	-M-----	...	215870000000
...	AD1.00	NIZMEN-00	00A-2635	AD01000 0	-G-CIP-----	P00R00A00600	154245555554
...	N10.00	AMPLITU-E	00A-2636	N12F000	-F-FFF-----	...	116840000000
...	AD1.00	SINYHON-00	00A-2637	AD00000 0	-G-CIP-----	...	184440000000
...	N10.00	SIGNAL-A	00A-2638	N11M000	-G-----	...	183370000000
...	IC1.00	N-E	00A-2639	N11M000	-G-----	...	110610000000
...	V01.00	VYZVAFT	00A-2640	VN 0P30000	-T---BAD-	BOB1B4B6	032650000000
...	N10.00	POJAVLENI-JA	00A-2641	N11N000	-G---N-A---	P4	154210000000
...	AD1.00	CHASTOT-VV	00A-2642	...	-G-----	...	212970000000
...	IC1.00	LI-I	00A-2643	...	-G-----	...	078400000000
...	AD1.00	AMPLITUD-VV	00A-2644	AD00000 0	-G---N-A---	...	024700000000
...	N10.00	ISKAZHENI-U	00A-2645	N11N000	-G-----	P4	081540000000
...	...	...	00A-2646	...	...	...	...
...	IC1.00	I	00A-2647	...	...	...	000000000000
...	IC1.00	CHT-U	00A-2648	...	...	...	000000000000
...	PO1.00	CHT-U	00A-2649	PNC1 STR1 0	N-A-----	...	213848750000
...	N04.00	VELICHKA-A	00A-2649	N12F000	N-----	...	213848750000
...	N07.00	FLUKTUATSI-U	00A-2650	N11F000	N-----	...	013050000000
...	N01.00	TSKHET-A	00A-2651	N11M000	-G-----	...	208760000000
...	IC1.00	N-A	00A-2652	...	-M-----	...	134600000000
...	N01.00	VYKOD-E	00A-2653	N11M000	-A-P---A-T-P	PAOR00DF0560	110780000000
...	V04.00	MAXOD-TTSJA	00A-2654	VNR0000000	---N-----	...	038670000000
...	IC1.00	VV	00A-2655	...	-T---BADR	B1B4B5	115800673675
...	N10.00	SOOTVETSTVI-I	00A-2656	N11N000	-A-P---A-P	PAOR00AB0650	000020000000
...	IC1.00	...	00A-2657	...	-G-I---GA-I-	P4	188070000000
...	N01.00	PEZUL-TAT-AM I	00A-2658	N11M000	-G-I---GA-I-	IGAR00AB1111	178910000000
...	N01.00	PASPHET-A	00A-2659	N11M000	-G-----	...	176540000000
...	...	...	00A-2660	...	...	...	175040000000

A Compound Relative Conjunction  
Figure 88

ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL					PREFERRED ARGUMENT		SYNTACTIC ROLE
TEST	110.00	1	TSPTANT-JA	CO 1A	00A-2628	NDIING00	-----N-----	R4	111 SUBJECT
SHOW	105.00	1	PKAZAL-I	CO 1C	00A-2629	VS00P2ESV0	000PPPA00	P7 B3	111 V PRED
..	101.00	1	CHT-U	CO 07	00A-2630				INF COMMA
INTRODUCTION	101.00	1	VVERENI-F	CO 1A	00A-2631				630K R CONJ
NOISE	101.00	1	SHUM-A	CO 1A	00A-2632	NDIING00	N-----	R4	631 SUBJECT
CONSTANT	101.00	1	RE-I	CO 1A	00A-2633	NDIIM000	-G-----		632 N COMP
AMPLITUDE	101.00	1	VEIPMEN-A	CO 1A	00A-2634	AD01000	-----P-----		INF PREP
SYNCHRONOUS	101.00	1	AMPLITU-E	CO 21	00A-2635	NDIIM000	-----P-----		634 R COMP
SIGNAL	101.00	1	SINBRON-00P	CO 25	00A-2636	NDIIM000	-----P-----		635 R COMP
..	101.00	1	STONAL-A	CO 25	00A-2637	AD00000	-----G-----		636 N COMP
..	101.00	1	VE	CO 29	00A-2638	NDIIM000	-----G-----		637 N COMP
..	101.00	1	VEZVA-ET	CO 29	00A-2639	NDIIM000	-----G-----		INF NEGATIVE
..	101.00	1	POJAVLENT-JA	CO 29	00A-2640	NDIIM000	-----G-----		631 V PRED
..	101.00	1	CHASTOTM-YA	CO 12	00A-2641	NDIING00	-----A-----	R4	640 OBJECT
..	101.00	1	1L-I	CO 16	00A-2642	AD01000	-----A-----		641 N COMP
..	101.00	1	AMPLITURN-YA	CO 20	00A-2643	AD00000	-----A-----		INF CONJUNCT
..	101.00	1	ISKAZHE-I-U	CO 21	00A-2644	NDIIM000	-----G-----		642 N COMP
..	101.00	1	..	CO 21	00A-2645	NDIIM000	-----G-----		644 N COMP
..	101.00	1	..	CO 22	00A-2646		-----N-----	R4	INF COMMA
..	101.00	1	..	CO 34	00A-2647		-----N-----		646K R CONJ
..	101.00	1	CHT-U	CO 27	00A-2648	PNCI STRI 0	N-----		647K SUBJECT
..	101.00	1	VELICHIN-A	CO 28	00A-2649	NDI2F000	N-----		INF ARBYR
..	101.00	1	FLUKTUAT-I-U	CO 28	00A-2650	NDI2F000	N-----		648 N COMP
..	101.00	1	OTSCHET-A	CO 22	00A-2651	NDIIM000	-----G-----		650 N COMP
..	101.00	1	N-A	CO 25	00A-2652		-----A-----		INF PREP
..	101.00	1	YXND-E	CO 30	00A-2653	NDIIM000	-----P-----		652 R COMP
..	101.00	1	YXND-I-TSJA	CO 30	00A-2654	VNR0P40000	-----P-----		INF ARBYR
..	101.00	1	..	CO 23	00A-2655		-----M-----		655 R COMP
..	101.00	1	SOOTVEITVI-I	CO 26	00A-2656	NDIIM000	-----A-----		INF PREP
..	101.00	1	..	CO 26	00A-2657		-----P-----		657 R COMP
..	101.00	1	BEZUL-TAT-A-I	CO 30	00A-2658	NDIIM000	-----GA-I-----		658 N COMP
..	101.00	1	DASCHET-A	CO 32	00A-2659	NDIIM000	-----I-----		END OF SENT.
..	101.00	1	..	CO 35	00A-2660		-----G-----		
..	101.00	1	..	CO 3A	00A-2660		-----M-----		

Figure 88 (continued)



## A Compound Noun Complement

Figure 89





UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
ATTN	101.00	C	00H-0229	4	-GA-I--GA-I-	IGAR00AB1111	178910000000		
ATTN	101.00	LLUSH-FU	00H-0230	AD00000	-G-CIP-----	P2	101845000000		
ATTN	101.00	LLUSH-FU	00H-0231	ND11F100	-F-EFF-----		052610000000		
ATTN	101.00	LLUSH-FU	00H-0232	4	-F-----		000000000000		
ATTN	101.00	LLUSH-FU	00H-0233	AD00000	-G-CIP-----		000000000000		
ATTN	101.00	LLUSH-FU	00H-0234	ND11F000	-F-----		101845000000		
ATTN	101.00	LLUSH-FU	00H-0235	ND11F000	-F-----		216680000000		
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE					
ATTN	02	08	00H-0229	-GA-I--GA-I-					
ATTN	02	10	00H-0230	-G-CIP-----					
ATTN	02	14	00H-0231	-F-EFF-----					
ATTN	02	15	00H-0232	-F-----					
ATTN	02	15	00H-0233	-G-CIP-----					
ATTN	02	14	00H-0234	-F-----					
HINDSIGHT									
	CHAIN NO	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE					
ATTN	02	08	00H-0229	-GA-I--GA-I-					
ATTN	02	10	00H-0230	-G-CIP-----					
ATTN	02	14	00H-0231	-F-EFF-----					
ATTN	02	15	00H-0232	-F-----					
ATTN	02	15	00H-0233	-G-CIP-----					
ATTN	02	14	00H-0234	-F-----					

An Analysis with Object - Compound Preposition Complement Ambiguity  
Figure 91

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
REFLECTING	ADU.CU	ZAVTSJASCHCH-IE	00K-0107	ADU100	-----A-----	F400	058710000000
ROOM	ICU.CU	AT-	00K-0108	ADU100	-----A-----	G00R00000000	130520000000
WE	ICU.CU	AT-UGU	00K-0109	CEXPRSJUV	-----G-----	OGA000000000	124420006943
WE	ICU.CU	IL-I	00K-0110	C	-----BP-----		078400000000
FEA	ICU.CU	NEKULIK-IX	00K-0111	C XEACUNY	-----AA-----A	00000000GACOP	118940000000
CONTINUOUS	ADU.CU	NEPEREVA-U	00K-0112	ADU000 2 0	N-----N-----	000000000000	118940000000
CHANGING	ADU.CU	IMFENJALISHC	00K-0113	ADU000 4R	-----GA-----P	0000	076470000000
PARAMETER	ICU.CU	PARAMETR-UV	00K-0114	ADU10000	-----G-----M		1365P0000000

## ANALYZED TEXT

	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
REFLECTING	ADU.CU	40	-----A-----	105 MODIFIER
ROOM	ICU.CU	36	-----G-----	INF PREP
WE	ICU.CU	38	-----B-----	108 R COMP
WE	ICU.CU	42	-----A-----	INF CONJUNCT
FEA	ICU.CU	42	-----N-----	109C R COMP
CONTINUOUS	ADU.CU	43	-----G-----	INF ADVB
CHANGING	ADU.CU	43	-----G-----	111C R COMP
PARAMETER	ICU.CU	42	-----H-----	113C R COMP

## HINDSIGHT

	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
REFLECTING	-----G-----	108 R COMP
ROOM	-----G-----	109C R COMP
WE	-----A-----	107 MODIFIER
WE	-----A-----	107 MODIFIER
FEA	-----A-----	107C MODIFIER
CONTINUOUS	-----A-----	107C MODIFIER
CHANGING	-----A-----	107C MODIFIER
PARAMETER	-----A-----	107 MODIFIER

A Compounded Adjective  
Figure 92

UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIOrganized WORD	DICTIONARY SERIAL NO.		
1. TSH	P01.00	IN-A	\$ -0772	PN K STP 0	N-----F-----		126772000002		
2. UN	V20.00	KOTEL-A	\$ -0773	VN OP50000	SSS---A-D-	P9 B3	211416071426		
3. .	V1A.00	ICT-I	\$ -0774	VN OP00000	F-	B0	074020000000		
4. IT	101.00	.A	\$ -0775				000010000000		
5. D	101.00	-A	\$ -0776	C			000015000000		
6. THEH	A00.00	ORUG-IE	\$ -0777	NDK1000	-----N-A-----		055700000000		
7. CONTINUE	V01.00	PRGOLZHAL-I	\$ -0778	VN OUP70000	---PPPAAD-	P9 B3	161576666660		
8. SAY	V04.00	GOVORI-T.	\$ -0779	VN OP00000	F-	B0B6	042550000000		
9. .			\$ -0780						
ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT			SYNTACTIC ROLE			
1. TSH	P01.00	18	\$ -0772	PN K STP 0	N-----F-----	111 SUBJECT			
2. UN	V20.00	09	\$ -0773	VN OP50000	SSS000AFDQ	111 V PRED			
3. .	V1A.00	06	\$ -0774	VN OP30000	FO	773 V MAST			
4. IT	101.00	07	\$ -0775			INF COMMA			
5. D	101.00	19	\$ -0776	C		775K R CONJ			
6. THEH	A00.00	15	\$ -0777	NDK1000	-----N-A-----	776 SUBJECT			
7. CONTINUE	V01.00	18	\$ -0778	VN OUP70000	OCPPPPAADQ	776 V PRED			
8. SAY	V04.00	14	\$ -0779	VN OP30000	FO	778 V MAST			
9. .		15	\$ -0780			END OF SENT.			
HINDSIGHT									
PREDICTION	WIPE	773012000650	000000000000	000	0	0	0	0	0
1. TSH	---	773012000650	000000000000	000	0	0	0	0	0
2. UN	---	773012000650	000000000000	000	0	0	0	0	0
3. .	---	773012000650	000000000000	000	0	0	0	0	0
4. IT	---	773012000650	000000000000	000	0	0	0	0	0
5. D	---	773012000650	000000000000	000	0	0	0	0	0
6. THEH	---	773012000650	000000000000	000	0	0	0	0	0
7. CONTINUE	---	773012000650	000000000000	000	0	0	0	0	0
8. SAY	---	773012000650	000000000000	000	0	0	0	0	0
9. .	---	773012000650	000000000000	000	0	0	0	0	0
INTERSECTING ARGUMENTS									
1. TSH	---	773012000650	000000000000	000	0	0	0	0	0
2. UN	---	773012000650	000000000000	000	0	0	0	0	0
3. .	---	773012000650	000000000000	000	0	0	0	0	0
4. IT	---	773012000650	000000000000	000	0	0	0	0	0
5. D	---	773012000650	000000000000	000	0	0	0	0	0
6. THEH	---	773012000650	000000000000	000	0	0	0	0	0
7. CONTINUE	---	773012000650	000000000000	000	0	0	0	0	0
8. SAY	---	773012000650	000000000000	000	0	0	0	0	0
9. .	---	773012000650	000000000000	000	0	0	0	0	0
ALTERNATIVE ROLE									
1. TSH	---	773012000650	000000000000	000	0	0	0	0	0
2. UN	---	773012000650	000000000000	000	0	0	0	0	0
3. .	---	773012000650	000000000000	000	0	0	0	0	0
4. IT	---	773012000650	000000000000	000	0	0	0	0	0
5. D	---	773012000650	000000000000	000	0	0	0	0	0
6. THEH	---	773012000650	000000000000	000	0	0	0	0	0
7. CONTINUE	---	773012000650	000000000000	000	0	0	0	0	0
8. SAY	---	773012000650	000000000000	000	0	0	0	0	0
9. .	---	773012000650	000000000000	000	0	0	0	0	0
END OF SENT.									

An Analysis with Infinite Conjunction - Relative Conjunction Ambiguity  
Figure 93

UNANALYZED TEXT							
ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD TRANSLITERATED	TEXT SERIAL NO	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO
...	...	...	00000000	00000000	---	00000000	00000000
...	...	...	00000001	00000001	---	00000001	00000001
...	...	...	00000002	00000002	---	00000002	00000002
...	...	...	00000003	00000003	---	00000003	00000003
...	...	...	00000004	00000004	---	00000004	00000004
...	...	...	00000005	00000005	---	00000005	00000005
...	...	...	00000006	00000006	---	00000006	00000006
...	...	...	00000007	00000007	---	00000007	00000007
...	...	...	00000008	00000008	---	00000008	00000008
...	...	...	00000009	00000009	---	00000009	00000009
...	...	...	00000010	00000010	---	00000010	00000010
...	...	...	00000011	00000011	---	00000011	00000011
...	...	...	00000012	00000012	---	00000012	00000012
...	...	...	00000013	00000013	---	00000013	00000013
...	...	...	00000014	00000014	---	00000014	00000014
...	...	...	00000015	00000015	---	00000015	00000015
...	...	...	00000016	00000016	---	00000016	00000016
...	...	...	00000017	00000017	---	00000017	00000017
...	...	...	00000018	00000018	---	00000018	00000018
...	...	...	00000019	00000019	---	00000019	00000019
...	...	...	00000020	00000020	---	00000020	00000020
...	...	...	00000021	00000021	---	00000021	00000021
...	...	...	00000022	00000022	---	00000022	00000022
...	...	...	00000023	00000023	---	00000023	00000023
...	...	...	00000024	00000024	---	00000024	00000024
...	...	...	00000025	00000025	---	00000025	00000025
...	...	...	00000026	00000026	---	00000026	00000026
...	...	...	00000027	00000027	---	00000027	00000027
...	...	...	00000028	00000028	---	00000028	00000028
...	...	...	00000029	00000029	---	00000029	00000029
...	...	...	00000030	00000030	---	00000030	00000030
...	...	...	00000031	00000031	---	00000031	00000031
...	...	...	00000032	00000032	---	00000032	00000032
...	...	...	00000033	00000033	---	00000033	00000033
...	...	...	00000034	00000034	---	00000034	00000034
...	...	...	00000035	00000035	---	00000035	00000035
...	...	...	00000036	00000036	---	00000036	00000036
...	...	...	00000037	00000037	---	00000037	00000037
...	...	...	00000038	00000038	---	00000038	00000038
...	...	...	00000039	00000039	---	00000039	00000039
...	...	...	00000040	00000040	---	00000040	00000040
...	...	...	00000041	00000041	---	00000041	00000041
...	...	...	00000042	00000042	---	00000042	00000042
...	...	...	00000043	00000043	---	00000043	00000043
...	...	...	00000044	00000044	---	00000044	00000044
...	...	...	00000045	00000045	---	00000045	00000045
...	...	...	00000046	00000046	---	00000046	00000046
...	...	...	00000047	00000047	---	00000047	00000047
...	...	...	00000048	00000048	---	00000048	00000048
...	...	...	00000049	00000049	---	00000049	00000049
...	...	...	00000050	00000050	---	00000050	00000050
...	...	...	00000051	00000051	---	00000051	00000051

An Analysis with Infinite Conjunction - Relative Conjunction Ambiguity  
Figure 94

ANALYZED TEXT									
	CHAIN NO	SIZE OF POOL					PREFERRED ARGUMENT		SYNTACTIC ROLE
COLLECTIVE	101.00	10	CON-0423	0	AD00000	0	--A--P--A--P	PA0000AB0650	INF PREP
PLACER	101.00	24	CON-0424	0	AD00000	130	--P--P--P--P	R400	423 R COMP
PLACER	101.00	24	CON-0425	0	AD00000	130	N--P--P--P		111 A PRED
PLACER	101.00	24	CON-0426	0	AD00000	130	N--P--P--P		INF ADVB
PLACER	101.00	24	CON-0427	0	AD00000	130	N--P--P--P		111 SUBJECT
PLACER	101.00	24	CON-0428	0	AD00000	130	N--P--P--P	PA0000340120	INF PREP
PLACER	101.00	24	CON-0429	0	AD00000	130	N--P--P--P		428 R COMP
PLACER	101.00	24	CON-0430	0	AD00000	130	N--P--P--P		429 R COMP
PLACER	101.00	24	CON-0431	0	AD00000	130	N--P--P--P	IGAR000AB1111	INF PREP
PLACER	101.00	24	CON-0432	0	AD00000	130	N--P--P--P		431 R COMP
PLACER	101.00	24	CON-0433	0	AD00000	130	N--P--P--P		432 R COMP
PLACER	101.00	24	CON-0434	0	AD00000	130	N--P--P--P		INF COMMA
PLACER	101.00	24	CON-0435	0	AD00000	130	N--P--P--P		430 MODIFIER
PLACER	101.00	24	CON-0436	0	AD00000	130	N--P--P--P		435 OBJECT
PLACER	101.00	24	CON-0437	0	AD00000	130	N--P--P--P		436 OBJECT
PLACER	101.00	24	CON-0438	0	AD00000	130	N--P--P--P		437 N COMP
PLACER	101.00	24	CON-0439	0	AD00000	130	N--P--P--P		438 N COMP
PLACER	101.00	24	CON-0440	0	AD00000	130	N--P--P--P		INF PREP
PLACER	101.00	24	CON-0441	0	AD00000	130	N--P--P--P		440 R COMP
PLACER	101.00	24	CON-0442	0	AD00000	130	N--P--P--P		441 R COMP
PLACER	101.00	24	CON-0443	0	AD00000	130	N--P--P--P		INF COMMA
PLACER	101.00	24	CON-0444	0	AD00000	130	N--P--P--P		443K R CONJ
PLACER	101.00	24	CON-0445	0	AD00000	130	N--P--P--P		444 SUBJECT
PLACER	101.00	24	CON-0446	0	AD00000	130	N--P--P--P	PA0000340120	INF PREP
PLACER	101.00	24	CON-0447	0	AD00000	130	N--P--P--P		446 R COMP
PLACER	101.00	24	CON-0448	0	AD00000	130	N--P--P--P		INF COMMA
PLACER	101.00	24	CON-0449	0	AD00000	130	N--P--P--P		447 MODIFIER
PLACER	101.00	24	CON-0450	0	AD00000	130	N--P--P--P		449 AGENT
PLACER	101.00	24	CON-0451	0	AD00000	130	N--P--P--P		END OF SENT.
PLACER	101.00	24	CON-0452	0	AD00000	130	N--P--P--P		425 AGENT
PLACER	101.00	24	CON-0453	0	AD00000	130	N--P--P--P		111 IND OBJ
PLACER	101.00	24	CON-0454	0	AD00000	130	N--P--P--P		425 AGENT
PLACER	101.00	24	CON-0455	0	AD00000	130	N--P--P--P		INF CLAUSER
PLACER	101.00	24	CON-0456	0	AD00000	130	N--P--P--P		INF CONJUNCT
PLACER	101.00	24	CON-0457	0	AD00000	130	N--P--P--P		437 AGENT
PLACER	101.00	24	CON-0458	0	AD00000	130	N--P--P--P		INF CLAUSER
PLACER	101.00	24	CON-0459	0	AD00000	130	N--P--P--P		INF CONJUNCT
PLACER	101.00	24	CON-0460	0	AD00000	130	N--P--P--P		INF ADVB
PLACER	101.00	24	CON-0461	0	AD00000	130	N--P--P--P		INF CLAUSER
PLACER	101.00	24	CON-0462	0	AD00000	130	N--P--P--P		INF CONJUNCT
PLACER	101.00	24	CON-0463	0	AD00000	130	N--P--P--P		444 L OBJ
PLACER	101.00	24	CON-0464	0	AD00000	130	N--P--P--P		435 MODIFIER
PLACER	101.00	24	CON-0465	0	AD00000	130	N--P--P--P		END OF SENT.

Figure 94 (continued)

UNANALYZED TEXT									
CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	3rd SEMI-ORGANIZED WORD	ALTERNATIVE ARGUMENTS	DICTIONARY SERIAL NO.			
P	PLATE	0313	PN A PZP		N-N				

A Genitive Basic Phrase as a Comparative Complement

Figure 95



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		3rd SEMI-ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SYNTACTIC ROLE	DICTIONARY SERIAL NO.	
			SERIAL NO.	ORGANIZED WORD					
averaged	ADJ. CL.	USREDNEKAYE	014-0622	AROUNO 30	0000	-----N-A-----		2064-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		12R5-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2087-333328	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		0729-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1851-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2128-50000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2128-77777770	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1193-66666666	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1833-00000000	

ANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		3rd SEMI-ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SYNTACTIC ROLE	DICTIONARY SERIAL NO.	
			SERIAL NO.	ORGANIZED WORD					
averaged	ADJ. CL.	USREDNEKAYE	014-0622	AROUNO 30	0000	-----N-A-----		2064-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		12R5-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2087-333328	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		0729-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1851-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2128-50000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2128-77777770	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1193-66666666	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1833-00000000	

HINDSIGHT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT		3rd SEMI-ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SYNTACTIC ROLE	DICTIONARY SERIAL NO.	
			SERIAL NO.	ORGANIZED WORD					
averaged	ADJ. CL.	USREDNEKAYE	014-0622	AROUNO 30	0000	-----N-A-----		2064-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		12R5-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2087-333328	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		0729-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1851-00000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2128-50000000	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		2128-77777770	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1193-66666666	
prediction	ADJ. CL.	42612023X01	014-0622	AROUNO 30	0000R4	-----N-A-----		1833-00000000	

An Unrecognized Comparative Complement





UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.		
ACCOUNT	NO1.00	RASCHET	CUH-0376	ND11M000	1 N-A-----		1750F0000000		
ELECTRIC	AOA.00	FLEKTRICHES K-IV	CUH-0377	AD00000	0 -----GA-P		2171F0000000		
PARAMETER	NO1.00	PARAMETRY-OV	CUH-0378	ND11M000	0 -----G		1365F0000000		
STRIP	AOA.00	POLOSKUYA	CUH-0379	AD00000	0 -----GA-P		1505F6666666		
LINE	NO1.00	LIN-IJ	CUH-0380	ND11F000	1 -----G		1001F0000000		
CHARACTERIST IC	AOA.00	KARAKTERISTICHESK-OGO	CUH-0381	AD01000	0 -----G		2111F0000000		
RESISTANCE	NO1.00	SOPROTIVLEN' OJA	CUH-0382	ND11M100	0 -----G		18R310000000		
ATTENUATION	NO1.00	TAUXANT-JA	CUH-0383	ND11M000	0 -----G		069910000000		
ALSO	NO1.00	TAKZH-E	CUH-0384	AD00000	0 -----G		0000F0000000		
SIMILAR	NO1.00	T.F.-	CUH-0385	AD00000	0 -----G		0000F5000000		
BIT	NO1.00		CUH-0386	AD00000	0 -----G		197878000000		
AND	NO1.00		CUH-0387	AD00000	0 -----G				
ALSO	NO1.00		CUH-0388	AD00000	0 -----G				
PARAMETER	NO1.00		CUH-0389	AD00000	0 -----G				
LINE	NO1.00		CUH-0390	AD00000	0 -----G				
CHARACTERIST IC	AOA.00	KARAKTERISTICHESK-OGO	CUH-0391	AD01000	0 -----G				
RESISTANCE	NO1.00	SOPROTIVLEN' OJA	CUH-0392	ND11M100	0 -----G				
ATTENUATION	NO1.00	TAUXANT-JA	CUH-0393	AD00000	0 -----G				
ALSO	NO1.00	TAKZH-E	CUH-0394	AD00000	0 -----G				
SIMILAR	NO1.00	T.F.-	CUH-0395	AD00000	0 -----G				
BIT	NO1.00		CUH-0396	AD00000	0 -----G				
AND	NO1.00		CUH-0397	AD00000	0 -----G				
ALSO	NO1.00		CUH-0398	AD00000	0 -----G				
PARAMETER	NO1.00		CUH-0399	AD00000	0 -----G				
LINE	NO1.00		CUH-0400	AD00000	0 -----G				
CHARACTERIST IC	AOA.00	KARAKTERISTICHESK-OGO	CUH-0401	AD01000	0 -----G				
RESISTANCE	NO1.00	SOPROTIVLEN' OJA	CUH-0402	ND11M100	0 -----G				
ATTENUATION	NO1.00	TAUXANT-JA	CUH-0403	AD00000	0 -----G				
ALSO	NO1.00	TAKZH-E	CUH-0404	AD00000	0 -----G				
SIMILAR	NO1.00	T.F.-	CUH-0405	AD00000	0 -----G				
BIT	NO1.00		CUH-0406	AD00000	0 -----G				
AND	NO1.00		CUH-0407	AD00000	0 -----G				
ALSO	NO1.00		CUH-0408	AD00000	0 -----G				
PARAMETER	NO1.00		CUH-0409	AD00000	0 -----G				
LINE	NO1.00		CUH-0410	AD00000	0 -----G				
CHARACTERIST IC	AOA.00	KARAKTERISTICHESK-OGO	CUH-0411	AD01000	0 -----G				
RESISTANCE	NO1.00	SOPROTIVLEN' OJA	CUH-0412	ND11M100	0 -----G				
ATTENUATION	NO1.00	TAUXANT-JA	CUH-0413	AD00000	0 -----G				
ALSO	NO1.00	TAKZH-E	CUH-0414	AD00000	0 -----G				
SIMILAR	NO1.00	T.F.-	CUH-0415	AD00000	0 -----G				
BIT	NO1.00		CUH-0416	AD00000	0 -----G				
AND	NO1.00		CUH-0417	AD00000	0 -----G				
ALSO	NO1.00		CUH-0418	AD00000	0 -----G				
PARAMETER	NO1.00		CUH-0419	AD00000	0 -----G				
LINE	NO1.00		CUH-0420	AD00000	0 -----G				

A Parenthetic Expression Set Off by Parentheses  
Figure 99

HINDSIGHT				INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF ARBYR
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF CLAUSER
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF CONJUNCT
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF ADVB
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	585C-ODIFER
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF CLAUSER
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF CONJUNCT
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	INF ADVB
CHARACTERISTICS	IC	ACA	ACA	ACA	ACA	377C N COMP

Figure 99 (continued)

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIORGANIZED WORD	DICTIONARY SERIAL NO.
POSSIBILITY	NCA-00	VOZMOZHNOST'	00A-1089	ND11F000	-G-C-P-A-A--	P2P9	02150041665
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1090	ND11F000	-G-C-P-A-A--	P2P9	15901000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1091	ND11F000	-G-C-P-A-A--	P2P9	195204285714
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1092	ND11F000	-G-C-P-A-A--	P2P9	15774000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1093	ND11F000	-G-C-P-A-A--	P2P9	05197000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1094	ND11F000	-G-C-P-A-A--	P2P9	11125000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1095	ND11F000	-G-C-P-A-A--	P2P9	18337000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1096	ND11F000	-G-C-P-A-A--	P2P9	14572000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1097	ND11F000	-G-C-P-A-A--	P2P9	21587000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1098	ND11F000	-G-C-P-A-A--	P2P9	01021000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1099	ND11F000	-G-C-P-A-A--	P2P9	01400000000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1100	ND11F000	-G-C-P-A-A--	P2P9	12417750000
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1101	ND11F000	-G-C-P-A-A--	P2P9	
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1102	ND11F000	-G-C-P-A-A--	P2P9	

## ANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO.	SIZE OF POOL	PREFERRED ARGUMENT	SYNTACTIC ROLE
POSSIBILITY	NCA-00	VOZMOZHNOST'	00	24	-N-----	C88 SUBJECT
APPLICATION	NCA-00	VOZMOZHNOST'	00	30	-G-----	C89 N COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	34	-G-----	C90 N COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	38	-G-----	C91 N COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	40	-G-----	C92 R COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	42	-G-----	C93 R COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	44	-G-----	C94 N COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	46	-G-----	C95 R COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	48	-G-----	C96 R COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	50	-G-----	C97 R COMP
APPLICATION	NCA-00	VOZMOZHNOST'	00	52	-G-----	C98 V PRED
APPLICATION	NCA-00	VOZMOZHNOST'	00	54	-G-----	C99 V PRED
APPLICATION	NCA-00	VOZMOZHNOST'	00	56	-G-----	C100 V COMP

## HINDSIGHT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	CHAIN NO.	SIZE OF POOL	INTERSECTING ARGUMENTS	ALTERNATIVE ROLE
POSSIBILITY	NCA-00	VOZMOZHNOST'	00A-1089	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1090	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1091	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1092	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1093	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1094	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1095	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1096	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1097	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1098	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1099	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1100	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1101	ND11F000	-G-C-P-A-A--	C88 L OBJ
APPLICATION	NCA-00	VOZMOZHNOST'	00A-1102	ND11F000	-G-C-P-A-A--	C88 L OBJ

A Parenthetic Expression Set Off by Quotes



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.	
TYPE	ADP	ПОДПИСЬ	004-0507	ADDP000	-----N-A-----	P2		1475400000000	
АНТЕННА	ACI	АНТЕННА-ВЕ	004-0508	ADDP000	-----N-A-----			0031000000000	
СИСТЕМА	NCH	СИСТЕМА-В	004-0509	ADDP000	-----N-A-----			184422857142	
УСТРОЙСТВО	VCU	УСТРОЙСТВО-У	004-0510	ADDP000	-----N-A-----			1271100000000	
КАБЕЛЬ	ICU	КАБЕЛЬ-В	004-0511	ADDP000	-----N-A-----			0000200000000	
КОЛЛЕКТОР	CCU	КОЛЛЕКТОР-В	004-0512	ADDP000	-----N-A-----			0000000000000	
СТАЦИОНАР	NCH	СТАЦИОНАР-В	004-0513	ADDP000	-----N-A-----			0465000000000	
...	...	...	004-0514	ADDP000	-----N-A-----			1921200000000	
...	...	...	004-0515	ADDP000	-----N-A-----			1801150000000	
ANALYZED TEXT									
CHAIN NO	SIZE OF	SYNTACTIC	PREFERRED ARGUMENT	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.		
00 1A	004-0507	111	-----N-A-----	-----N-A-----	P2		1475400000000		
00 11	004-0508	507	-----N-A-----	-----N-A-----			0031000000000		
00 11	004-0509	508	-----N-A-----	-----N-A-----			184422857142		
00 11	004-0510	111	-----N-A-----	-----N-A-----			1271100000000		
00 06	004-0511	111	-----N-A-----	-----N-A-----			0000200000000		
00 09	004-0512	111	-----N-A-----	-----N-A-----			0000000000000		
00 13	004-0513	111	-----N-A-----	-----N-A-----			0465000000000		
00 13	004-0514	111	-----N-A-----	-----N-A-----			1921200000000		
00 1A	004-0515	111	-----N-A-----	-----N-A-----			1801150000000		
HINDSIGHT									
CHAIN NO	SIZE OF	SYNTACTIC	PREFERRED ARGUMENT	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.		
00 1A	004-0507	111	-----N-A-----	-----N-A-----	P2		1475400000000		
00 11	004-0508	507	-----N-A-----	-----N-A-----			0031000000000		
00 11	004-0509	508	-----N-A-----	-----N-A-----			184422857142		
00 11	004-0510	111	-----N-A-----	-----N-A-----			1271100000000		
00 06	004-0511	111	-----N-A-----	-----N-A-----			0000200000000		
00 09	004-0512	111	-----N-A-----	-----N-A-----			0000000000000		
00 13	004-0513	111	-----N-A-----	-----N-A-----			0465000000000		
00 13	004-0514	111	-----N-A-----	-----N-A-----			1921200000000		
00 1A	004-0515	111	-----N-A-----	-----N-A-----			1801150000000		

An Analyzed Sentence  
Figure 102

CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE	ARGUMENTS	SEMIOrganized WORD	3rd	DICTIOnARY SERIAL NO.
C01.00	СЛАВЯ	C04-0049	NPXPAPJBY	---	---	C00010000000		124418124999
C01.00	СЛАВЯ	C04-0050		-G---	-C---	G03R0PAP00300		074050000000
C01.00	СЛАВЯ	C04-0051	NP11MCC	---	---	P3		190900000000
A02.00	СЛАВЯ	C04-0052	APC0CC	0	-N---			154371666666
A02.00	СЛАВЯ	C04-0053	NP11MCC	-G---	-N---	P4P9		177890000000
C01.00	СЛАВЯ	C04-0054	PK K PTD	0	-N---			218922708330
C01.00	СЛАВЯ	C04-0055	NP14FC00	---	-G---			060940000000
C01.00	СЛАВЯ	C04-0056	VN UQ00C0	---	-F---			219270000000
C01.00	СЛАВЯ	C04-0057	NP11MCC	-G---	-MM---	B0B184B6		197710000000
C01.00	СЛАВЯ	C04-0058	NP11F100	N	---			197720000000
C01.00	СЛАВЯ	C04-0059	AP12F0Y0	0	-F---			142670000000
C01.00	СЛАВЯ	C04-0060	AP12F0Y0	1	-G---			194309444444

NAME	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT		SYNTACTIC ROLE
			1	2	
001.00	00	1R	004-0049	0	0000100000000
101.00	00	00	004-0050	0	00000A00300
201.00	00	00	004-0051	0	Pa
301.00	00	15	004-0052	0	050 R COMP
401.00	00	19	004-0053	0	051 N COMP
501.00	00	21	004-0054	0	052 N COMP
601.00	00	25	004-0055	0	053 N COMP
701.00	00	29	004-0056	0	054 N COMP
801.00	00	33	004-0057	0	055 N COMP
901.00	00	37	004-0058	0	056 N COMP
1001.00	00	41	004-0059	0	057 N COMP
1101.00	00	45	004-0060	0	058 N COMP
1201.00	00	49	004-0061	0	059 N COMP
1301.00	00	53	004-0062	0	060 N COMP
1401.00	00	57	004-0063	0	061 N COMP
1501.00	00	61	004-0064	0	062 N COMP
1601.00	00	65	004-0065	0	063 N COMP
1701.00	00	69	004-0066	0	064 N COMP
1801.00	00	73	004-0067	0	065 N COMP
1901.00	00	77	004-0068	0	066 N COMP
2001.00	00	81	004-0069	0	067 N COMP
2101.00	00	85	004-0070	0	068 N COMP
2201.00	00	89	004-0071	0	069 N COMP
2301.00	00	93	004-0072	0	070 N COMP
2401.00	00	97	004-0073	0	071 N COMP
2501.00	00	101	004-0074	0	072 N COMP
2601.00	00	105	004-0075	0	073 N COMP
2701.00	00	109	004-0076	0	074 N COMP
2801.00	00	113	004-0077	0	075 N COMP
2901.00	00	117	004-0078	0	076 N COMP
3001.00	00	121	004-0079	0	077 N COMP
3101.00	00	125	004-0080	0	078 N COMP
3201.00	00	129	004-0081	0	079 N COMP
3301.00	00	133	004-0082	0	080 N COMP
3401.00	00	137	004-0083	0	081 N COMP
3501.00	00	141	004-0084	0	082 N COMP
3601.00	00	145	004-0085	0	083 N COMP
3701.00	00	149	004-0086	0	084 N COMP
3801.00	00	153	004-0087	0	085 N COMP
3901.00	00	157	004-0088	0	086 N COMP
4001.00	00	161	004-0089	0	087 N COMP
4101.00	00	165	004-0090	0	088 N COMP
4201.00	00	169	004-0091	0	089 N COMP
4301.00	00	173	004-0092	0	090 N COMP
4401.00	00	177	004-0093	0	091 N COMP
4501.00	00	181	004-0094	0	092 N COMP
4601.00	00	185	004-0095	0	093 N COMP
4701.00	00	189	004-0096	0	094 N COMP
4801.00	00	193	004-0097	0	095 N COMP
4901.00	00	197	004-0098	0	096 N COMP
5001.00	00	201	004-0099	0	097 N COMP
5101.00	00	205	004-0100	0	098 N COMP
5201.00	00	209	004-0101	0	099 N COMP
5301.00	00	213	004-0102	0	100 N COMP
5401.00	00	217	004-0103	0	101 N COMP
5501.00	00	221	004-0104	0	102 N COMP
5601.00	00	225	004-0105	0	103 N COMP
5701.00	00	229	004-0106	0	104 N COMP
5801.00					

[illegible]

An Analyzed Sentence  
Figure 103

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
NUMERATE	V04.00	PERFECTLY-1	00K-0117	VS OP30000				14201428571
A PER	001.00	NEKULY-C	00K-0118	PN XEACUNYK	N-A---N-A---A-A---A-A---	B284		11895033328
SOMEWHAT	101.00	NEKULY-C	00K-0118	M		000000000000		11895033328
PROBLEM	104.10	ZALACH	00K-0119	ND14F000	-----G-----F-----			06090000000
..			00K-0120					
ILLUSTRATING	004.00	ILLUSTROIU USCH-IX	00K-0121	AD0100 40	-----GA--P-----AA--A P700			078509230760
NECESSITY	004.00	NECEXOIMOSY -Y	00K-0122	ND11F000	N-A-----F-----P2P9			117522500001
DESIGNING	101.00	DESIGNI-JA	00K-0123	ND11N100	-N-----N-N-----P4			133070000000
THEORY	107.00	TEORI-I	00K-0124	ND11F000	-G-C-PN-A---F-F-F-F---			107100000000
HANDS	002.00	SUCHAJU-YX	00K-0125	AD000000 0	-----GA--B-----AA--A			18571145827
PROCESSES	001.00	PRUTSE-CV	00K-0126	ND11M000	-----G-----M-----			164970000000
..			00K-0127					
NEW PARAGRAPH	004.00	NEW PARAGRAPH	00K-0128					
PRESENTED	004.00	PRESENTAV-IM	00K-0129	AD000000 01	N-----M-----			195775000000
PRESENT	004.01	PRESENTAV-IM	00K-0129	VS00P3L200	-----V--CAD-----	B284		155700000000
UNSELF	001.00	SE-E	00K-0130	PN K AX L	-----C-P--C-P-----A-A--A-A			18245666666
..			00K-0131					
THAT	101.00	CHT-U	00K-0132	C	N-A-----N-N-----			213808750000
..			00K-0133	PN A RVP 0	-----N-----H-----			213808750000
IF GIVEN A - ASK	001.00	ZALAL-IE	00K-0134	VSROP80000	-----PPPAADR-----B1			102313333338
ATM	004.00	TSEL-TU	00K-0135	ND11F000	-----I-----F-----P2			060928000000
TRACE	004.00	PRUCLECI-T	00K-0136	VS OP30000	-----F-----			211870000000
FOR	101.00	Z-A	00K-0137	R	-----A---A-I-----B086			163910000000
ACCOMENT	004.00	DVIZHENI-EM	00K-0138	ND11N100	-----I-----N-----1A0R00860680			037200000000
SOME	001.00	KAKU-LTR-C	00K-0139	PK K STT 0	NGAIP-----HEFHEF-----P4			045910000000
MOLECULE	004.00	MOLEKUL-Y	00K-0140	ND12F000	-G-----N-A---F-F-F-F---			08545120304
GAS	101.00	GAZ-A	00K-0141	ND11M000	-----G-----N-----			110049285710
..			00K-0142					039950000000
LIQUID	101.00	IL-I	00K-0143	ND11F100	-G-C-PN-A---F-F-F-F-F-F---P2			078400000000
..			00K-0144					057070000000

An Analyzed Sentence

Figure 104



ANALYZED TEXT									
	CHAIN NO.	SIZE OF POOL				PREFERRED ARGUMENT		SYNTACTIC ROLE	
NUMERATE	V04.00	PERFCHIL-IV	00 18	00K-0117	VS 0P30000	000V000CADD		III V PRED	
A FE*	D01.00	NEKULIK-0	00 07	00K-0118	NAXEACUNYKK	--A--A--		117 OBJECT	
PROLEP	N04.10	ZADACH-	00 11	00K-0119	NDI4F000	--A--A--		118 OBJECTN	
..		..	00 11	00K-0120	..	--G--		INF COMMA	
ILLUSTRATING	A04.00	ILLJUSIPRIUJ USHCH-IX	00 22	00K-0121	AD0100 40	--G--		119 MODIFIER	
NECESSITY	N04.00	NEGXOUIMOST -	00 18	00K-0122	ND11F000	--A--		121 OBJECT	
DESIGNING	N10.00	POSTROEPI-JA	00 23	00K-0123	ND11N100	--G--		122 N COMP	
THEORY	N07.00	TEORI-I	00 27	00K-0124	ND11F000	--N--		123 N COMP	
WINDUP	AC2.00	SLUCHAJN-YX	00 30	00K-0125	AD000000 0	--G--		124 N COMP	
PROCES	NC1.00	PROTSFSS-OV	00 34	00K-0126	ND11M000	--G--		125 N COMP	
..		..	00 34	00K-0127	..	--M--		END OF SENT.	
HINDSIGHT									
A FE*	D01.00	NEKULIK-0	00K-0118	PNXEACUNYKK		--A--A--		117 OBJECT	
SOMEWHAT	IC1.00	NEKULIK-0	00K-0120	..		--A--A--		INF ADVB	
..		..	00K-0120	..		--A--A--		INF CLAUSER	
THEORY	N07.00	TEORI-I	00K-0124	ND11F000		--C--		122 OBJECT	
WINDUP	AD2.00	SLUCHAJN-YX	00K-0125	AD000000 0		--G--		121 MODIFIER	
PROCES	N01.00	PROTSFSS-OV	00K-0126	ND11M000		--G--		121 MODIFIER	
..		..	00K-0127	..		--M--		END OF SENT.	

Figure 104 (continued)



An Analyzed Sentence

HINDSIGHT		INTERSECTING ARGUMENTS		ALTERNATIVE ROLE
CV105	ADP.00	CK-02R41	ADDP000	INF ADVB
CV106	CV105	CK-02R42	1	INF ADVB
CV107	101.00	CK-02R43	1	INF ADVB
CV108	101.00	CK-02R44	1	INF ADVB
CV109	101.00	CK-02R45	1	III A-PRED
CV110	101.00	CK-02R5	1	INF CLAUSER
CV111	101.00	CK-02R6	1	INF CONJUNCT
CV112	101.00	CK-02R7	1	286K SUBJCT
CV113	101.00	CK-02R8	1	111K SUBJCT
CV114	101.00	CK-02R9	1	INF ADVB
CV115	101.00	CK-02R10	1	290 OBJECT
CV116	101.00	CK-02R11	1	285 IND OBJ
CV117	101.00	CK-02R12	1	INF CLAUSER
CV118	101.00	CK-02R13	1	INF CONJUNCT
CV119	101.00	CK-02R14	1	INF ADVB
CV120	101.00	CK-02R15	1	294 IND OBJ
CV121	101.00	CK-02R16	1	294 SUBJCT
CV122	101.00	CK-02R17	1	294 IND OBJ
CV123	101.00	CK-02R18	1	END OF SENT.

Figure 106 (continued)

FIRST ENGLISH EQUIVALENT		CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE	ARGUMENTS	SEMI-ORGANIZED WORD	3rd	DICTIONARY SERIAL NO.
FROM HERE	101.00	075JUD-A		00H-0344	H					134760000000
VISIBLE	ADP.00	VICN-O		00H-03451	H					016357500000
EVIDENTLY	101.00	VICN-O		00H-03452	H					016353750000
EVIDENTLY	101.00	VICN-O		00H-03459	H					016350000000
WHAT	101.00	KAK-IE		00H-0346						
WHAT	101.00	KAK-IE		00H-0347						
WHAT	101.00	KAK-IE		00H-0348						
WHAT	101.00	KAK-IE		00H-0349						
WHAT	101.00	KAK-IE		00H-0350						
WHAT	101.00	KAK-IE		00H-0351						
WHAT	101.00	KAK-IE		00H-0352						
WHAT	101.00	KAK-IE		00H-0353						
WHAT	101.00	KAK-IE		00H-0354						
WHAT	101.00	KAK-IE		00H-0355						
WHAT	101.00	KAK-IE		00H-0356						
WHAT	101.00	KAK-IE		00H-0357						
WHAT	101.00	KAK-IE		00H-0358						
WHAT	101.00	KAK-IE		00H-0359						
WHAT	101.00	KAK-IE		00H-0360						
WHAT	101.00	KAK-IE		00H-0361						
WHAT	101.00	KAK-IE		00H-0362						
WHAT	101.00	KAK-IE		00H-0363						
WHAT	101.00	KAK-IE		00H-0364						
WHAT	101.00	KAK-IE		00H-0365						
WHAT	101.00	KAK-IE		00H-0366						
WHAT	101.00	KAK-IE		00H-0367						
WHAT	101.00	KAK-IE		00H-0368						
WHAT	101.00	KAK-IE		00H-0369						
WHAT	101.00	KAK-IE		00H-0370						
WHAT	101.00	KAK-IE		00H-0371						
WHAT	101.00	KAK-IE		00H-0372						
WHAT	101.00	KAK-IE		00H-0373						
WHAT	101.00	KAK-IE		00H-0374						
WHAT	101.00	KAK-IE		00H-0375						
WHAT	101.00	KAK-IE		00H-0376						
WHAT	101.00	KAK-IE		00H-0377						
WHAT	101.00	KAK-IE		00H-0378						
WHAT	101.00	KAK-IE		00H-0379						
WHAT	101.00	KAK-IE		00H-0380						
WHAT	101.00	KAK-IE		00H-0381						
WHAT	101.00	KAK-IE		00H-0382						
WHAT	101.00	KAK-IE		00H-0383						
WHAT	101.00	KAK-IE		00H-0384						
WHAT	101.00	KAK-IE		00H-0385						
WHAT	101.00	KAK-IE		00H-0386						
WHAT	101.00	KAK-IE		00H-0387						
WHAT	101.00	KAK-IE								

An Analyzed Sentence



# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMI-ORGANIZED WORD	DICTIONARY SERIAL NO.
PERFECTION	N12.00	SOVERSHENIYE OVANI-F	00K-0021	ND11N100	N-A-----		186715000000
PHYSICAL	A04.00	FIZICHESK-QJ	00K-0022	AD01000	-G-CIP-----	P4	208330000000
STATISTICAL	N04.10	STATISTIK-I	00K-0023	ND11F000	-G-----N-A-----		192000000000
..		..	00K-0024				
..		..	00K-0025				
..		..	00K-0026				
..		..	00K-0027				
..		..	00K-0028				
..		..	00K-0029				
..		..	00K-0030				
..		..	00K-0031				
..		..	00K-0032				
..		..	00K-0033				
..		..	00K-0034				
..		..	00K-0035				
..		..	00K-0036				
..		..	00K-0037				
..		..	00K-0038				
..		..	00K-0039				
..		..	00K-0040				
..		..	00K-0041				
..		..	00K-0042				
..		..	00K-0043				
..		..	00K-0044				
..		..	00K-0045				
..		..	00K-0046				
..		..	00K-0047				

An Analyzed Sentence  
Figure 108

# ANALYZED TEXT

SYNTACTIC ROLE	PRE-ferred ARGUMENT	SIZE OF POOL	CHAIN NO	ANALYZED TEXT
111 SUBJECT	N-----	00 16	00 16	COVERSHIPS
021 N COMP	-G-----	00 10	00 10	STATISTICS
022 N COMPM	-F-----	00 14	00 14	STATISTICS
INF COMMA	-F-----	00 14	00 14	STATISTICS
INF CONJUNCT	-F-----	00 26	00 26	STATISTICS
INF ADVB	-F-----	00 24	00 24	STATISTICS
022C N COMP	-F-----	00 24	00 24	STATISTICS
027 N COMP	-F-----	00 24	00 24	STATISTICS
028 N COMP	-F-----	00 24	00 24	STATISTICS
INF COMMA	-F-----	00 20	00 20	STATISTICS
111 V PRED	SSS-00AND0	00 31	00 31	STATISTICS
INF PREP	100000400300	00 04	00 04	STATISTICS
032 R COMP	-F-----	00 04	00 04	STATISTICS
033 N COMP	-F-----	00 12	00 12	STATISTICS
031 OBJECT	-F-----	00 14	00 14	STATISTICS
035 OBJECTH	-F-----	00 14	00 14	STATISTICS
036 N COMP	-F-----	00 14	00 14	STATISTICS
INF COMMA	-F-----	00 24	00 24	STATISTICS
INF NEGATIVE	-F-----	00 24	00 24	STATISTICS
037 N COMPM	-F-----	00 24	00 24	STATISTICS
INF PREP	-F-----	00 20	00 20	STATISTICS
041 R COMP	-F-----	00 23	00 23	STATISTICS
042 N COMP	-F-----	00 27	00 27	STATISTICS
043 N COMPM	-F-----	00 27	00 27	STATISTICS
INF COMMA	-F-----	00 34	00 34	STATISTICS
040 N COMPM	-F-----	00 14	00 14	STATISTICS
END OF SENT.	-F-----			

## HINDSIGHT

ALTERNATIVE ROLE	INTERSECTING ARGUMENTS	SIZE OF POOL	CHAIN NO	ANALYZED TEXT
111 L OBJ	-A-----	00 16	00 16	COVERSHIPS
021 AGENT	-A-----	00 10	00 10	STATISTICS
111 L OBJ	-A-----	00 14	00 14	STATISTICS
111 IND OBJ	-A-----	00 14	00 14	STATISTICS
111 L OBJ	-A-----	00 26	00 26	STATISTICS
INF CLAUSER	-A-----	00 24	00 24	STATISTICS
INF CONJUNCT	-A-----	00 24	00 24	STATISTICS
111 L OBJ	-A-----	00 24	00 24	STATISTICS
INF CLAUSER	-A-----	00 31	00 31	STATISTICS
INF CONJUNCT	-A-----	00 04	00 04	STATISTICS
INF CLAUSER	-A-----	00 12	00 12	STATISTICS
INF CONJUNCT	-A-----	00 14	00 14	STATISTICS
040 AGENT	-A-----	00 14	00 14	STATISTICS
111 IND OBJ	-A-----	00 24	00 24	STATISTICS
INF CLAUSER	-A-----	00 24	00 24	STATISTICS
INF CONJUNCT	-A-----	00 24	00 24	STATISTICS
END OF SENT.	-A-----			

Figure 108 (continued)





[illegible]

Figure 109 (continued)

# UNANALYZED TEXT

FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMIOLOGIZED WORD	DICTIONARY SERIAL NO.
..	101.00	N-A	00K-0252	H	--A--P--A--P	PAOR00DF0560	110700000000
..	101.00	VE-F	00K-0253	PK K ATF	N-A--N-A--		027250000000
..	101.00	EMT-I	00K-0254	PK K PTD	N-A--N-A--		218919583332
..	101.00	EMT-I	00K-0255	C	-----N-A--		000000000000
..	101.00	EMT-I	00K-0256	H	-----N-A--		000000000000
..	101.00	VE-F	00K-0257	KOKIOO	-----N-A--		000000000000
..	101.00	VE-F	00K-0258	KOKIOO	-----N-A--		000000000000
..	101.00	VE-F	00K-0259	VN 000000	-----N-A--		000000000000
..	101.00	VE-F	00K-0260	VN 000000	-----N-A--		000000000000
..	101.00	VE-F	00K-0261	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0262	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0263	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0264	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0265	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0266	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0267	PK K STRITC	-----N-A--		000000000000
..	101.00	VE-F	00K-0268	VN 000000	-----N-A--		000000000000
..	101.00	VE-F	00K-0269	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0270	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0271	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0272	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0273	C	-----N-A--		000000000000
..	101.00	VE-F	00K-0274	C	-----N-A--		000000000000
..	101.00	VE-F	00K-0275	C	-----N-A--		000000000000
..	101.00	VE-F	00K-0276	AD0000	-----N-A--		000000000000
..	101.00	VE-F	00K-0277	H	-----N-A--		000000000000
..	101.00	VE-F	00K-0278	VN 000000	-----N-A--		000000000000
..	101.00	VE-F	00K-0279	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0280	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0281	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0282	AD01000	-----N-A--		000000000000
..	101.00	VE-F	00K-0283	AD01000	-----N-A--		000000000000

An Analyzed Sentence

Figure 110



HINDSIGHT		INTERSECTING ARGUMENTS		ALTERNATIVE ROLE	
WIPIC	252 R COMP	PN K ATF	0	252 R COMP	INF CLAUSER
WIPIC	253 R COMP	PN K ATF	0	253 R COMP	INF CLAUSER
WIPIC	254 R COMP	PN K ATF	0	254 R COMP	INF CLAUSER
WIPIC	255 R COMP	PN K ATF	0	255 R COMP	INF CLAUSER
WIPIC	256 R COMP	PN K ATF	0	256 R COMP	INF CLAUSER
WIPIC	257 R COMP	PN K ATF	0	257 R COMP	INF CLAUSER
WIPIC	258 R COMP	PN K ATF	0	258 R COMP	INF CLAUSER
WIPIC	259 R COMP	PN K ATF	0	259 R COMP	INF CLAUSER
WIPIC	260 R COMP	PN K ATF	0	260 R COMP	INF CLAUSER
WIPIC	261 R COMP	PN K ATF	0	261 R COMP	INF CLAUSER
WIPIC	262 R COMP	PN K ATF	0	262 R COMP	INF CLAUSER
WIPIC	263 R COMP	PN K ATF	0	263 R COMP	INF CLAUSER
WIPIC	264 R COMP	PN K ATF	0	264 R COMP	INF CLAUSER
WIPIC	265 R COMP	PN K ATF	0	265 R COMP	INF CLAUSER
WIPIC	266 R COMP	PN K ATF	0	266 R COMP	INF CLAUSER
WIPIC	267 R COMP	PN K ATF	0	267 R COMP	INF CLAUSER
WIPIC	268 R COMP	PN K ATF	0	268 R COMP	INF CLAUSER
WIPIC	269 R COMP	PN K ATF	0	269 R COMP	INF CLAUSER
WIPIC	270 R COMP	PN K ATF	0	270 R COMP	INF CLAUSER
WIPIC	271 R COMP	PN K ATF	0	271 R COMP	INF CLAUSER
WIPIC	272 R COMP	PN K ATF	0	272 R COMP	INF CLAUSER
WIPIC	273 R COMP	PN K ATF	0	273 R COMP	INF CLAUSER
WIPIC	274 R COMP	PN K ATF	0	274 R COMP	INF CLAUSER
WIPIC	275 R COMP	PN K ATF	0	275 R COMP	INF CLAUSER
WIPIC	276 R COMP	PN K ATF	0	276 R COMP	INF CLAUSER
WIPIC	277 R COMP	PN K ATF	0	277 R COMP	INF CLAUSER
WIPIC	278 R COMP	PN K ATF	0	278 R COMP	INF CLAUSER
WIPIC	279 R COMP	PN K ATF	0	279 R COMP	INF CLAUSER
WIPIC	280 R COMP	PN K ATF	0	280 R COMP	INF CLAUSER
WIPIC	281 R COMP	PN K ATF	0	281 R COMP	INF CLAUSER
WIPIC	282 R COMP	PN K ATF	0	282 R COMP	INF CLAUSER
WIPIC	283 R COMP	PN K ATF	0	283 R COMP	INF CLAUSER
WIPIC	284 R COMP	PN K ATF	0	284 R COMP	INF CLAUSER
WIPIC	285 R COMP	PN K ATF	0	285 R COMP	INF CLAUSER
WIPIC	286 R COMP	PN K ATF	0	286 R COMP	INF CLAUSER
WIPIC	287 R COMP	PN K ATF	0	287 R COMP	INF CLAUSER
WIPIC	288 R COMP	PN K ATF	0	288 R COMP	INF CLAUSER
WIPIC	289 R COMP	PN K ATF	0	289 R COMP	INF CLAUSER
WIPIC	290 R COMP	PN K ATF	0	290 R COMP	INF CLAUSER
WIPIC	291 R COMP	PN K ATF	0	291 R COMP	INF CLAUSER
WIPIC	292 R COMP	PN K ATF	0	292 R COMP	INF CLAUSER
WIPIC	293 R COMP	PN K ATF	0	293 R COMP	INF CLAUSER
WIPIC	294 R COMP	PN K ATF	0	294 R COMP	INF CLAUSER
WIPIC	295 R COMP	PN K ATF	0	295 R COMP	INF CLAUSER
WIPIC	296 R COMP	PN K ATF	0	296 R COMP	INF CLAUSER
WIPIC	297 R COMP	PN K ATF	0	297 R COMP	INF CLAUSER
WIPIC	298 R COMP	PN K ATF	0	298 R COMP	INF CLAUSER
WIPIC	299 R COMP	PN K ATF	0	299 R COMP	INF CLAUSER
WIPIC	300 R COMP	PN K ATF	0	300 R COMP	INF CLAUSER
WIPIC	301 R COMP	PN K ATF	0	301 R COMP	INF CLAUSER
WIPIC	302 R COMP	PN K ATF	0	302 R COMP	INF CLAUSER
WIPIC	303 R COMP	PN K ATF	0	303 R COMP	INF CLAUSER
WIPIC	304 R COMP	PN K ATF	0	304 R COMP	INF CLAUSER
WIPIC	305 R COMP	PN K ATF	0	305 R COMP	INF CLAUSER
WIPIC	306 R COMP	PN K ATF	0	306 R COMP	INF CLAUSER
WIPIC	307 R COMP	PN K ATF	0	307 R COMP	INF CLAUSER
WIPIC	308 R COMP	PN K ATF	0	308 R COMP	INF CLAUSER
WIPIC	309 R COMP	PN K ATF	0	309 R COMP	INF CLAUSER
WIPIC	310 R COMP	PN K ATF	0	310 R COMP	INF CLAUSER
WIPIC	311 R COMP	PN K ATF	0	311 R COMP	INF CLAUSER
WIPIC	312 R COMP	PN K ATF	0	312 R COMP	INF CLAUSER
WIPIC	313 R COMP	PN K ATF	0	313 R COMP	INF CLAUSER
WIPIC	314 R COMP	PN K ATF	0	314 R COMP	INF CLAUSER
WIPIC	315 R COMP	PN K ATF	0	315 R COMP	INF CLAUSER

Figure 110 (continued)

UNANALYZED TEXT							
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	3rd SEMI-ORGANIZED WORD	DICTONARY SERIAL NO.
APPLICATION	N10.00	PRIMENENT-1	CUH-0517	ND11M000	N-A		159010000000
STRIP	AC1.00	POLOSNOV-YA	CUH-0518	AD000000	6A-P	P4	150576666666
INF	N07.00	LIN-IJ	CUH-0519	ND11F000	6A-P		100100000000
..			CUH-0520		6A-P		
..			CUH-0521		6A-P		
..			CUH-0522		6A-P		
..			CUH-0523		6A-P		
..			CUH-0524		6A-P		
..			CUH-0525		6A-P		
..			CUH-0526		6A-P		
..			CUH-0527		6A-P		
..			CUH-0528		6A-P		
..			CUH-0529		6A-P		
..			CUH-0530		6A-P		
..			CUH-0531		6A-P		
..			CUH-0532		6A-P		
..			CUH-0533		6A-P		
..			CUH-0534		6A-P		
..			CUH-0535		6A-P		
..			CUH-0536		6A-P		
..			CUH-0537		6A-P		
..			CUH-0538		6A-P		
..			CUH-0539		6A-P		
..			CUH-0540		6A-P		
..			CUH-0541		6A-P		
..			CUH-0542		6A-P		
..			CUH-0543		6A-P		
..			CUH-0544		6A-P		
..			CUH-0545		6A-P		
..			CUH-0546		6A-P		
..			CUH-0547		6A-P		
..			CUH-0548		6A-P		
..			CUH-0549		6A-P		
..			CUH-0550		6A-P		
..			CUH-0551		6A-P		

An Analyzed Sentence  
Figure 111

ANALYZED TEXT									
APPLICATION	CHAIN NO	SIZE OF POOL		SYNTACTIC ROLE	PREFERRED ARGUMENT	R4	B3	R400	B08184B6
		NO	17						
APPLICATION	N01,00	PRIMEVAL-E	N01,00	111 SUBJECT	N-----	N-----	N-----	N-----	N-----
LINE	N01,00	POLOSOU-YA	N01,00	517 N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	LTA-LU	N01,00	518 N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	INF COMMA	N-----	N-----	N-----	N-----	N-----
..	N01,00	KAN-	N01,00	520K R CONJ	N-----	N-----	N-----	N-----	N-----
..	N01,00	YU-C	N01,00	521 V PRED	N-----	N-----	N-----	N-----	N-----
..	N01,00	ZE-E	N01,00	INF ADVB	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	522 V COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	INF COMMA	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	527 R COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	528 R COMPM	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	INF ADVB	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	529 V MAST	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	531 OBJECT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	INF CONJUNCT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	532C OBJECT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	534 N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	535 N COMPM	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	END OF SENT.	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	111 SUBJECT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	538 N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	539 N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	540 N COMPM	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	INF CONJUNCT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	540C N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	111 V PRED	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	544 OBJECT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	545 OBJECTH	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	INF CONJUNCT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	545C OBJECT	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	548 N COMP	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	549 N COMPM	N-----	N-----	N-----	N-----	N-----
..	N01,00	..	N01,00	END OF SENT.	N-----	N-----	N-----	N-----	N-----

Figure 111 (continued)

[illegible]

Figure 111 (continued)



UNANALYZED TEXT									
FIRST ENGLISH EQUIVALENT	CLASS MARKER	RUSSIAN WORD (TRANSLITERATED)	TEXT SERIAL NO.	ORGANIZED WORD	ALTERNATIVE ARGUMENTS	SEMIOrganized WORD	3rd WORD	DICTONARY SERIAL NO.	
...	...	...	000-0272	W	---	PAOPORARU650		000020000000	
...	...	...	000-0273	W	---	---		21926874994	
...	...	...	000-0274	W	---	---		185740000000	
...	...	...	000-0275	W	---	---		154245555554	
...	...	...	000-0276	W	---	---		162370000000	
...	...	...	000-0277	W	---	---		150576666666	
...	...	...	000-0278	W	---	---		202890000000	
...	...	...	000-0279	W	---	---		211875000000	
...	...	...	000-0280	W	---	---		159050000000	
...	...	...	000-0281	W	---	---		106670000000	
...	...	...	000-0282	W	---	---		075270000000	
...	...	...	000-0283	W	---	---		142670000000	
...	...	...	000-0284	W	---	---		194309444448	
...	...	...	000-0285	W	---	---		089281666665	
...	...	...	000-0286	W	---	---		089280000000	
...	...	...	000-0287	W	---	---		150576666666	
...	...	...	000-0288	W	---	---		161300000000	
...	...	...	000-0289	W	---	---		108950000000	
...	...	...	000-0290	W	---	---		010650000000	
...	...	...	000-0291	W	---	---		114580000000	
...	...	...	000-0292	W	---	---		114076666666	
...	...	...	000-0293	W	---	---		161401666666	
...	...	...	000-0294	W	---	---		095895000000	
...	...	...	000-0295	W	---	---		110780000000	
...	...	...	000-0296	W	---	---		100570000000	
...	...	...	000-0297	W	---	---		051950000000	
...	...	...	000-0298	W	---	---		000010000000	
...	...	...	000-0299	W	---	---		000015000000	
...	...	...	000-0300	W	---	---		069020000000	
...	...	...	000-0301	W	---	---		15169545450	
...	...	...	000-0302	W	---	---		110780000000	
...	...	...	000-0303	W	---	---		062070000000	
...	...	...	000-0304	W	---	---		106440000000	
...	...	...	000-0305	W	---	---		143870000000	
...	...	...	000-0306	W	---	---		078400000000	
...	...	...	000-0307	W	---	---		105270000000	
...	...	...	000-0308	W	---	---		000000000010	
...	...	...	000-0309	W	---	---		046388888886	
...	...	...	000-0310	W	---	---		062070000000	
...	...	...	000-0311	W	---	---		143870000000	
...	...	...	000-0312	W	---	---		000010000000	
...	...	...	000-0313	W	---	---		000015000000	

An Analyzed Sentence

Figure 112

ANALYZED TEXT	CHAIN NO	SIZE OF POOL	PREFERRED ARGUMENT	SYNTAGTIC ROLE
10100 V	00 1R	00H-0272	PA K STD	0
10100 FRI-UM	00 41	00H-0273	PA K STD	0
10100 SOUTH-AP	00 25	00H-0274	PA K STD	0
10100 COT	00 42	00H-0275	PA K STD	0
10100 PULZVUTV-F	00 47	00H-0276	PA K STD	0
10100 PULZVUTV-A	00 30	00H-0277	PA K STD	0
10100 PULZVUTV-A	00 31	00H-0278	PA K STD	0
10100 PULZVUTV-A	00 32	00H-0279	PA K STD	0
10100 PULZVUTV-A	00 33	00H-0280	PA K STD	0
10100 PULZVUTV-A	00 34	00H-0281	PA K STD	0
10100 PULZVUTV-A	00 35	00H-0282	PA K STD	0
10100 PULZVUTV-A	00 36	00H-0283	PA K STD	0
10100 PULZVUTV-A	00 37	00H-0284	PA K STD	0
10100 PULZVUTV-A	00 38	00H-0285	PA K STD	0
10100 PULZVUTV-A	00 39	00H-0286	PA K STD	0
10100 PULZVUTV-A	00 40	00H-0287	PA K STD	0
10100 PULZVUTV-A	00 41	00H-0288	PA K STD	0
10100 PULZVUTV-A	00 42	00H-0289	PA K STD	0
10100 PULZVUTV-A	00 43	00H-0290	PA K STD	0
10100 PULZVUTV-A	00 44	00H-0291	PA K STD	0
10100 PULZVUTV-A	00 45	00H-0292	PA K STD	0
10100 PULZVUTV-A	00 46	00H-0293	PA K STD	0
10100 PULZVUTV-A	00 47	00H-0294	PA K STD	0
10100 PULZVUTV-A	00 48	00H-0295	PA K STD	0
10100 PULZVUTV-A	00 49	00H-0296	PA K STD	0
10100 PULZVUTV-A	00 50	00H-0297	PA K STD	0
10100 PULZVUTV-A	00 51	00H-0298	PA K STD	0
10100 PULZVUTV-A	00 52	00H-0299	PA K STD	0
10100 PULZVUTV-A	00 53	00H-0300	PA K STD	0
10100 PULZVUTV-A	00 54	00H-0301	PA K STD	0
10100 PULZVUTV-A	00 55	00H-0302	PA K STD	0
10100 PULZVUTV-A	00 56	00H-0303	PA K STD	0
10100 PULZVUTV-A	00 57	00H-0304	PA K STD	0
10100 PULZVUTV-A	00 58	00H-0305	PA K STD	0
10100 PULZVUTV-A	00 59	00H-0306	PA K STD	0
10100 PULZVUTV-A	00 60	00H-0307	PA K STD	0
10100 PULZVUTV-A	00 61	00H-0308	PA K STD	0
10100 PULZVUTV-A	00 62	00H-0309	PA K STD	0
10100 PULZVUTV-A	00 63	00H-0310	PA K STD	0
10100 PULZVUTV-A	00 64	00H-0311	PA K STD	0
10100 PULZVUTV-A	00 65	00H-0312	PA K STD	0
10100 PULZVUTV-A	00 66	00H-0313	PA K STD	0
10100 PULZVUTV-A	00 67	00H-0314	PA K STD	0
10100 PULZVUTV-A	00 68	00H-0315	PA K STD	0
10100 PULZVUTV-A	00 69	00H-0316	PA K STD	0
10100 PULZVUTV-A	00 70	00H-0317	PA K STD	0
10100 PULZVUTV-A	00 71	00H-0318	PA K STD	0
10100 PULZVUTV-A	00 72	00H-0319	PA K STD	0
10100 PULZVUTV-A	00 73	00H-0320	PA K STD	0
10100 PULZVUTV-A	00 74	00H-0321	PA K STD	0
10100 PULZVUTV-A	00 75	00H-0322	PA K STD	0
10100 PULZVUTV-A	00 76	00H-0323	PA K STD	0
10100 PULZVUTV-A	00 77	00H-0324	PA K STD	0
10100 PULZVUTV-A	00 78	00H-0325	PA K STD	0
10100 PULZVUTV-A	00 79	00H-0326	PA K STD	0
10100 PULZVUTV-A	00 80	00H-0327	PA K STD	0
10100 PULZVUTV-A	00 81	00H-0328	PA K STD	0
10100 PULZVUTV-A	00 82	00H-0329	PA K STD	0
10100 PULZVUTV-A	00 83	00H-0330	PA K STD	0
10100 PULZVUTV-A	00 84	00H-0331	PA K STD	0
10100 PULZVUTV-A	00 85	00H-0332	PA K STD	0

Figure 112 (continued)



UNCLASSIFIED

1. Machine translation
2. Natural language model
3. Data processing systems

1. Sherry, Murray E.

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research.

Prelexive syntactic analysis is a scheme for the reduction of the syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. This report supplements previous reports<sup>1</sup> on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research.

UNCL. ASSIFIED.

1. Machine translation
2. Natural language model
3. Data processing systems

I. Sherry, Murray E.

Predictive syntactic analysis is a scheme for the automatic syntactic analysis of natural language that is based on a continuous left-to-right scan of a sentence. This report supersedes previous reports on the experimental predictive syntactic analysis program for Russian. All the grammatical rules followed by the experimental program are here included. This paper is intended to serve at this time both as a report of past accomplishments and as a working paper on which to base future research.

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